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Before the
FEDERAL COMMUNICATIONS COMMISSION
 Washington, D.C. 20554

In the Matter of)	
)	
Numbering Resource Optimization)	CC Docket No. 99-200
)	
Connecticut Department of Public Utility Control)	RM No. 9258
Petition for Rulemaking to Amend the Commission's)	
Rule Prohibiting Technology-Specific or)	
Service-Specific Area Code Overlays)	
)	
Massachusetts Department of Telecommunications)	NSD File No. L-99-17
and Energy Petition for Waiver to Implement a)	
Technology-Specific Overlay in the)	
508, 617, 781, and 978 Area Codes)	
)	
California Public Utilities Commission and the People)	NSD File No. L-99-36
of the State of California Petition for Waiver to)	
Implement a Technology-Specific or Service-Specific)	
Area Code)	

NOTICE OF PROPOSED RULEMAKING

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By the Commission: Commissioner Tristani issuing a statement.

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Appendix A

I. INTRODUCTION

1. In this Notice of Proposed Rulemaking (Notice), we examine a variety of measures intended to increase the efficiency with which telecommunications carriers use telephone numbering resources. The purpose of this effort is two-fold: to slow the rate of number exhaust in this country as evidenced by the ever-increasing rate at which new area codes are assigned; and to prolong the life of the North American Numbering Plan (NANP).¹

2. In 1947, AT&T adopted the current nationwide numbering scheme, under which the ten-digit telephone number serves not only as a network "address," but also conveys information to the network as to how phone calls should be routed and billed. A principal benefit of this system was that it permitted automated routing of long-distance phone calls, obviating the need for operators to assist in routing. Under the allocation system that developed to support this system, numbering resources are allocated to local telephone exchange carriers on the basis of physical geography, rather than on the basis of end-user demand for those numbers. That is, typically a large block of numbers is allocated to a carrier for use in a geographic area, even though there may not be end-users assigned to each individual number available in the area. This system worked smoothly so long as only one entity (the local exchange carrier) offered only one type of service (wireline telephony) to customers.

¹ The North American Numbering Plan (NANP) is the basic numbering scheme for the telecommunications networks located in Anguilla, Antigua, Bahamas, Barbados, Bermuda, British Virgin Islands, Canada, Cayman Islands, Dominica, Dominican Republic, Grenada, Jamaica, Montserrat, St. Kitts & Nevis, St. Lucia, St. Vincent, Turks & Caicos Islands, Trinidad & Tobago, and the United States (including Puerto Rico, the U.S. Virgin Islands, Guam and the Commonwealth of the Northern Mariana Islands).

3. New services using the same numbering system, particularly cellular telephones, began to enter the telecommunications marketplace with increasing frequency beginning in the late 1980's. More recently, the Telecommunications Act of 1996² opened the market for competitive local wireline service, again giving rise to more players entering the market. In addition, many customers are obtaining additional telephone lines to support additional services such as Internet, data, and facsimile services. Because of the relatively recent explosion of market entry and customer demand for new services, as well as the allocation of telephone numbers to multiple service providers in large blocks on a geographic basis, we have witnessed an incredible increase in demand for numbering resources.

4. Although we are only just beginning to see the benefits of competition in the marketplace for local wireline telephone service, the coincident costs in the form of the rapid exhaust of area codes are already all too apparent. The effect on consumers having to undergo, in some cases, multiple area code changes in relatively short time frames is an unacceptable byproduct of burgeoning competition in the telecommunications marketplace. To illustrate the pace of area code exhaust, consider California, which, at the end of 1992, had 13 area codes in use.³ The California Public Utilities Commission projects that by the end of 2002, it will have 41 area codes.⁴ When the task of splitting the 323 area code from the 213 area code in the Los Angeles area was completed in April 1999, rather than lasting for ten or even five years, the new area code was immediately declared to be in jeopardy of exhausting its numbering resources.⁵

5. The goal of this proceeding is to address the underlying drivers of area code exhaust so that consumers are spared the enormous costs and inconveniences associated with the rapid pace of implementation of new area codes. In addition, clearly, implementing new area codes is not a solution that can continue indefinitely. As of the end of 1998, it was estimated that nearly one-third of the total number of geographic area codes assignable to the

² Pub. L. No. 104-104, 110 Stat. 56 (1996 Act). The 1996 Act amended the Communications Act of 1934, 47 U.S.C. §§ 151-714 (the Communications Act or the Act)

³ See Briefing On Numbering Issues, California Public Utilities Commission, April 26, 1999.

⁴ *Id.*

⁵ An area code jeopardy situation exists when the forecasted demand for numbering resources exceeds the known supply during the planning and implementation interval for relief in the form of the introduction of a new area code. See Central Office Code (NXX) Assignment Guidelines, INC 95-0407-008 (rev. Apr. 26, 1999) at § 13.0 (CO Code Guidelines). This document is available at <<http://www.atis.org/atis/clc/incdocs.htm>>.

United States had been put into service.⁶ By some projections, the NANP could exhaust within ten years.⁷ Because the estimated cost of expanding the NANP is enormous,⁸ and the time to effect such an expansion is estimated to be on the order of ten years,⁹ the need to extend the life of the current NANP through effective conservation and efficient utilization of numbering resources is apparent and immediate.

6. This Commission, with input from industry groups, advisory bodies, state public utility commissions and the public, has already begun to examine various numbering conservation and optimization methods. Continuing in these efforts, we issue this Notice to seek public comment on how best to create national standards for numbering resource optimization. In doing so, we seek to: (1) minimize the negative impact on consumers; (2) ensure sufficient access to numbering resources for all service providers that need them to enter into or to compete in telecommunications markets; (3) avoid, or at least delay, exhaust of the NANP and the need to expand the NANP; (4) impose the least societal cost possible, in a competitively neutral manner, while obtaining the highest benefit; (5) ensure that no class of carrier or consumer is unduly favored or disfavored by our optimization efforts; and (6) minimize the incentives for carriers to build and carry excessively large inventories of numbers.

II. EXECUTIVE SUMMARY

7. In this Notice, we consider and seek comment on a variety of administrative and technical measures that would promote more efficient allocation and use of NANP resources. In Section III, we seek specific comment on the relative costs and benefits, both financial and societal, of implementing each measure. We also ask that commenters weigh the cost of extending the life of the current NANP through various numbering resource optimization strategies against the projected cost of expansion of the NANP.

⁶ See North American Numbering Plan Exhaust Study, submitted to the NANC by the North American Numbering Plan Administration (NANPA) Lockheed Martin CIS, dated April 22, 1999 (NANP Exhaust Study) at 2-2. This study indicates that of a total of 680 area codes available, as of December 1998, 206 had been assigned for use within the United States, and 41 had been assigned for use in other NANP countries.

⁷ See *id.* at 2-9 and A-4.

⁸ Expanding the NANP would entail adding one or more digits to the current ten-digit dialing scheme to increase the number of available telephone numbers. Preliminary estimates place the cost of NANP expansion between 50 and 150 billion dollars. See NANC Meeting Minutes, February 18-19, 1999, at 13.

⁹ E.g., NANC Meeting Minutes, March 11, 1997, at 7.

8. In Section IV, we examine the existing mechanisms for the administration and allocation of numbering resources, which are governed by industry-developed guidelines. We find that the guidelines have not been effective in constraining the ability of carriers to obtain and carry excessively large inventories of numbering resources for which they have no immediate need. We seek comment on whether the guidelines should be modified or replaced, wholly or in part, by enforceable federal rules. Within the section, we outline proposals for a uniform set of numbering status definitions. We also seek comment on measures that would tie the allocation of new numbering resources to a showing of need by the carrier, increase carrier accountability for number utilization through enhanced data reporting and audit requirements, and speed the return of unused numbering resources. We specifically seek comment on the possibility of requiring carriers to meet number utilization thresholds before they can obtain additional numbering resources. These measures would not require implementation of new systems or technologies, and we believe that they could be implemented in a relatively short time period at minimal cost.

9. In Section V, we consider and seek comment on some specific numbering resource optimization solutions that could be implemented in addition to, or in combination with, stricter administrative standards for the administration and allocation of numbering resources. These methods include rate center consolidation, mandatory ten-digit dialing, and number pooling. We consider the likely costs and potential number optimization benefits of each of these solutions. We also seek comment on a host of issues related to the way in which number pooling might be implemented and administered, if we were to make carrier participation mandatory at some level.

10. In light of the potential costs of these numbering resource optimization solutions, we seek comment on whether the magnitude of the number exhaust problem justifies requiring carriers to participate in one or more of these solutions on a mandatory basis, either at the federal level or through delegation of authority to the states. In the alternative, we consider whether optimal use of numbering resources could be accomplished without the need for such mandates, provided that carriers achieved sufficiently high levels of efficiency in their usage of numbers. Under this approach, we would require carriers to meet specific number utilization thresholds, but would leave to each carrier the choice of what numbering optimization method or methods to use to achieve that threshold.

11. In Section VI, we consider whether establishing a pricing mechanism for numbering resources would improve the efficiency of number allocation and use. Although it is probably not feasible in the short-term to replace our existing numbering resource allocation mechanism with a market-based approach, we believe it is important to consider using market-based mechanisms to allocate numbers as a possible long-term alternative to

regulatory mandates. We seek comment on whether moving to a market-based system of allocating numbering resources is feasible, and how the transition to such a system could be implemented.

12. In Section VII, we consider area code relief methodologies, including splits, overlays, and boundary realignments, as numbering optimization strategies. We recognize that our consideration of both short-term and long-term numbering resource optimization measures in this Notice does not eliminate the need for states to continue to implement area code relief in those area codes that are approaching depletion. We seek comment on what action the Commission can take to assist states in implementing area code relief in a manner that is consistent with the objectives of this proceeding.

III. OVERVIEW

A. Background

13. With the passage of the 1996 Act, Congress sought to establish "a pro-competitive, deregulatory national policy framework" for the United States telecommunications industry.¹⁰ Competition in telecommunications markets is dependent, in part, upon fair and impartial access by all telecommunications carriers to national numbering resources. Inefficiencies in the allocation and utilization of numbering resources threaten to slow or halt the growth of competition by preventing new entrants from getting into telecommunications markets, and by preventing carriers already providing services from expanding their offerings. Thus, we view our efforts with regard to numbering resource optimization as an integral part of the Commission's overall efforts to implement fully the goals of the 1996 Act.

14. Equally importantly, numbering resource optimization efforts are necessary to address the considerable burdens imposed on consumers by the inefficient administration of numbering resources. Consumers face additional costs, both tangible and intangible, when a new area code is implemented in their local area. We believe that consumers should not be subjected to these increased costs and inconveniences except when absolutely necessary. Thus, we proceed with the additional goal of lessening the negative impact of numbering resource optimization and administration on consumers.

15. As discussed in greater detail below, there are several factors that contribute to the current strain on numbering resources. These factors include: (1) the allocation of numbers in blocks of 10,000 (NXX codes); (2) multiple rate centers, and the demand by most carriers to have at least one NXX code per rate center; (3) the increased demand for

¹⁰ Joint Statement of Managers, S. Conf. Rep. No. 104-230, 104th Cong., 2d Sess. 1 (1996).

numbering resources by new entrants and new technologies; and (4) the absence of regulatory, industry or economic control over requests for numbering resources. Each of the numbering resource optimization measures proposed in the Notice are intended to attack one or more of these numbering exhaust drivers.

16. *Numbering Administration Authority.* Section 251(e)(1) of the Communications Act grants the Commission plenary jurisdiction over numbering issues that pertain to the United States.¹¹ Specifically, the Act directs the Commission to create or designate one or more impartial entities to administer telecommunications numbering and to make such numbers available on an equitable basis. This section also gives the Commission the authority to delegate to state commissions or other entities all or any portion of its jurisdiction over numbering administration.¹² The Commission, however, retains jurisdiction over all matters it does not specifically delegate.¹³ We believe that we have the authority to adopt the numbering optimization measures set forth in this Notice pursuant to the numbering administration authority granted to the Commission under section 251(e).

¹¹ 47 U.S.C. § 251(e)(1) provides:

The Commission shall create or designate one or more impartial entities to administer telecommunications numbering and to make such numbers available on an equitable basis. The Commission shall have exclusive jurisdiction over those portions of the North American Numbering Plan that pertain to the United States. Nothing in this paragraph shall preclude the Commission from delegating to State commissions or other entities all or any portion of such jurisdiction.

See also Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, *Second Report and Order and Memorandum Opinion and Order*, CC Docket No. 96-98, 11 FCC Rcd 19392, 19511 (1996) (*Local Competition Second Report and Order*), *vacated in part*, California v. FCC, 124 F.3d 934 (8th Cir. 1997) (vacating dialing parity rules as applied to intraLATA telecommunications and finding challenge to cost recovery methodology for numbering administration not ripe for review), *rev'd* AT&T v. Iowa Utils. Bd., 199 S. Ct. 721 (1999).

¹² *Id.*

¹³ *Local Competition Second Report and Order*, 11 FCC Rcd at 19512, 19516 ("We retain our authority to set policy with respect to all facets of numbering administration in the United States. By retaining authority to set broad policy on numbering administration matters, we preserve our ability to act flexibly and expeditiously on broad policy issues and to resolve any dispute related to numbering administration pursuant to the 1996 Act.").

17. The Commission has promulgated rules to implement section 251(e)(1).¹⁴ These rules provide, in part, that if the Commission delegates to the states or to other entities any portion of its authority over telecommunications numbering, those states or entities must perform their delegated functions in a manner consistent with certain guidelines, which require that numbering administration: (1) facilitate entry into the telecommunications marketplace by making telecommunications numbering resources available on an efficient, timely basis to telecommunications carriers; (2) not unduly favor or disfavor any particular industry segment or group of telecommunications consumers; and (3) not unduly favor one telecommunications technology over another.¹⁵ These guidelines are intended to ensure the fair and timely availability of numbering resources to all telecommunications carriers.

18. The Commission also directed the North American Numbering Council (NANC),¹⁶ a federal advisory committee created to advise the Commission on numbering matters, to recommend to the Commission an independent, non-government entity to serve as the North American Numbering Plan Administrator (NANPA).¹⁷ Previously, the incumbent local exchange carrier (LEC) within each geographic area, until recently, had performed central office code assignment and area code relief functions,¹⁸ and Bell Communications Research (Bellcore) performed other numbering administration functions. In October 1997, the Commission affirmed the selection of Lockheed Martin IMS as the new NANPA, noting

¹⁴ See generally 47 C.F.R. Part 52.

¹⁵ 47 C.F.R. § 52.9(a)(1)-(3).

¹⁶ The NANC was created under the Federal Advisory Committee Act, 5 U.S.C. App. 2 (1988), to advise the Commission and to make recommendations, reached through consensus, that foster efficient and impartial number administration. The membership of NANC, which includes thirty-two voting members and four special non-voting members, was selected to represent all segments of the telecommunications industry as well as regulatory entities and consumer groups with interests in numbering administration. The current NANC charter directs the Council to develop recommendations on numbering policy issues and facilitate number conservation including identification of technical solutions to numbering exhaust.

¹⁷ Administration of the North American Numbering Plan, *Third Report and Order*; Toll Free Service Access Codes, *Third Report and Order*, CC Docket No. 95-155, 12 FCC Rcd at 23040, 23048 (1997) (*NANP Third Report and Order*).

¹⁸ "Central office code" or "NXX code" refers to the second three digits (also called digits D-E-F) of a ten-digit telephone number in the form NXX-NXX-XXXX, where N represents any one of the numbers 2 through 9 and X represents any one of the numbers 0 through 9. 47 C.F.R. § 52.7(c). "Area code relief" refers to the process by which central office codes are made available when there are few or no unassigned central office codes remaining in an existing area code and a new area code is introduced. 47 C.F.R. § 52.7(b).

that it would perform the numbering administration functions previously performed by Bellcore, as well as area code relief planning and CO code administration.¹⁹

19. *Area Code Relief.* The Commission has delegated to state commissions the authority to direct the form of area code relief, to perform the functions associated with initiating and planning area code relief, and to adopt final area code relief plans, subject to Commission and industry guidelines for numbering administration.²⁰

20. The assignment of new area codes has been the primary relief measure employed in geographic areas experiencing numbering resource shortages brought on by the rapid growth in demand for central office codes or NXX codes. NXX codes are in such demand because of the manner in which numbering resources are allocated; that is, entire NXX codes containing 10,000 telephone numbers apiece are typically allocated to service providers for each rate center within a Numbering Plan Area (NPA)²¹ in which the provider seeks to offer service.²² Thus, for example, if a new entrant seeks to provide service throughout a hypothetical NPA containing 50 rate centers, it would require 50 NXX codes (one per rate center), or 500,000 individual telephone numbers. With a maximum of 792 NXX codes in an NPA available for allocation,²³ the assignment of one NXX per rate center to as few as 16 service providers in the hypothetical NPA could literally exhaust the NPA upon activation, although few individual telephone numbers may actually be in use. This practice has contributed to a recent increase in the number of existing area codes going into jeopardy,²⁴ although many individual telephone numbers may remain unassigned or unused.

¹⁹ See *NANP Third Report and Order*, 12 FCC Rcd at 23041-42, 23051-52, and 23071-72.

²⁰ *Local Competition Second Report and Order*, 11 FCC Rcd 19392, 19512, 19516. See also discussion *infra* Section VII.

²¹ "Numbering Plan Area" (NPA), or "area code," refers to the first three digits (NXX) of a ten-digit telephone number in the form NXX-NXX-XXXX, where N represents any one of the numbers 2 through 9 and X represents any one of the numbers 0 through 9. 47 C.F.R. § 52.7(a).

²² See CO Code Guidelines at § 4.1-4.2 (rev. Apr. 26, 1999).

²³ Because NXX codes may not begin with either a 0 or a 1, and because any NXX in the form N11 is also excluded, there are 792 possible usable NXX codes in each NPA. This number represents an upper limit, however, because the existence of protected codes may lower the total number of available NXX codes. Protected codes are NXXs not available for use, typically because they are being used in close geographic proximity in an adjacent NPA in an area where there exists inter-NPA seven-digit dialing.

²⁴ Jeopardy is defined as a situation where the forecasted and/or actual demand for NXX codes in an area code will exceed the known supply during the planning/implementation interval for area code relief. *NPA Code Relief Planning & Notification Guidelines* (INC 97-0404-016), at § 14.0 (reissued January 27, 1999) (NPA Code

21. Preliminary estimates indicate that a relatively low percentage of individual telephone numbers are actually assigned to customers throughout the NANP. The NANPA estimates that the "fill rate," or actual assignment to subscribers of telephone numbers allocated to carriers, is between 5.7% and 52.6%, depending on the industry segment.²⁵ Despite the relatively low utilization rate of individual telephone numbers, existing area codes are entering jeopardy and new area codes are being activated throughout North America at an alarming rate. The pace of area code exhaust has accelerated exponentially in the past few years. For example, in 1984, the entire NANP had 125 area codes, and by December 1994, 134 area codes had been assigned, an increase of only nine area codes in 10 years.²⁶ In marked contrast, in 1996 alone, 22 area codes were added to the NANP, and in 1997, 43 area codes were added.²⁷ In 1998, 26 area codes were added to the NANP, bringing to 248 the total number of geographic codes assigned, with 207 of those codes serving portions of the United States.²⁸ Currently, 13 new area codes are expected to be activated in 1999, with 22 area code relief plans pending state public utility commission approval, many of which will likely lead to new area codes being added in 1999.²⁹ With only 680 usable area codes in the NANP, it is foreseeable that the NANP could exhaust in the relatively near term.³⁰ The compelling need for immediate and comprehensive action to make more efficient use of numbering resources is clear.

22. Concerns regarding the financial and societal costs of area code relief are well-founded. The introduction of a new area code carries with it a significant number of costs and burdens that are sometimes difficult to quantify. Consumers, who are especially reluctant to undergo certain forms of area code relief, are affected by an increase in cost and

Relief Guidelines). This document is available at <<http://www.atis.org/atis/clc/inc/incdocs.htm>>.

²⁵ Number Utilization Forecast and Trends, submitted by NANPA Lockheed Martin CIS, Feb. 18, 1999 (Number Utilization Study) at 8. This study is currently under review by the NANC. See NANC Meeting Minutes, Feb. 17-18, 1999.

²⁶ See WHERE HAVE ALL THE NUMBERS GONE? LONG-TERM AREA CODE RELIEF POLICIES AND THE NEED FOR SHORT-TERM REFORM, Economics and Technology, Inc., March 1998, at 19-24 (WHERE HAVE ALL THE NUMBERS GONE?).

²⁷ Number Utilization Study at 6.

²⁸ *Id.*

²⁹ *Id.* at 5.

³⁰ See Number Utilization Study at 13. Although there are 800 "dialable" NPAs in the NANP, several are reserved for possible NANP expansion, and others—for example those in the form N11—are unassignable. *Id.* at 4.

inconvenience. For example, approximately one-half of customers in an area code to be split will be assigned a new area code. Some tangible costs that consumers may experience in this instance include time and effort associated with notifying others of the change in area code, increased confusion and difficulty in completing calls to parties whose area codes have changed, monetary costs associated with reprinting stationery with the new area code, and time and effort associated with reprogramming telephone automatic dialing systems, and other equipment, to incorporate the new area code.³¹ Intangible costs to consumers may include the loss of a community's geographic identity and many other costs which are difficult to quantify.³²

23. Similarly, businesses also bear significant costs when they, or their customers, are subject to area code relief. Tangible costs may include those associated with reprogramming or replacing telecommunications equipment such as private branch exchanges (PBXs), updating customer databases that contain phone number fields, and reprinting advertising and stationery. Certain industries are uniquely harmed by the transition to a new area code; alarm systems, for example, generally must be individually reprogrammed or even replaced to accommodate changes in dialing patterns.³³ The telecommunications industry, in particular, incurs additional operational costs related to equipment and technology upgrades necessary to provide service. Intangible costs to businesses associated with a change in area code may include a loss of goodwill when customers have difficulties reaching the intended business.³⁴

24. State public utility commissions face an enormous burden in determining when, and in what form, to implement area code relief. In the initial stages, state utility commissions must expend resources to convene public meetings and to plan for area code relief. They must also work with the NANPA and the industry to effect the chosen area code relief plan, and bear the costs of notifying the public. Furthermore, state commissions

³¹ See *WHERE HAVE ALL THE NUMBERS GONE?* at 20-21.

³² See *id.* at 20-22.

³³ See Public Utility Commission of Texas Petition for Expedited Waiver of 47 C.F.R. Section 52.19(c)(3)(ii) for Area Code Relief, *Order*, NSD File No. L-98-105, 13 FCC Rcd. 21798, 21803-04 (1998).

³⁴ For example, a business that has changed its area code may lose customers if an intercept message no longer directs them to the new area code, but rather their call either ends in a generic error message, or is directed to a new party. See *WHERE HAVE ALL THE NUMBERS GONE?* at 20.

inevitably bear the brunt of consumer dissatisfaction with whatever method of area code relief is chosen.³⁵

25. These limitations in the current area code relief paradigm underscore the need for more efficient and longer-term solutions to the numbering crisis. They also establish the need for a shift in focus to other relief methods that effect optimization, and not merely the addition, of numbering resources. Because of the overwhelming costs associated with the implementation of new area codes, we believe that this Commission should take definite and immediate steps to ensure that telecommunications numbering resources are administered more efficiently.

26. *Numbering Resource Optimization Efforts.* The Commission, state public utility commissions, and the telecommunications industry have taken steps to optimize the use of numbering resources through various administrative and regulatory efforts. Many of these undertakings will be examined at length in this Notice, toward the goal of creating a uniform national strategy for numbering resource optimization.

27. One such effort is the development by the industry of the CO Code Guidelines, which were designed to provide a framework for allocation of numbering resources within the geographic area codes of the NANP.³⁶ Another, mandated by the Commission in its rules and addressed in the CO code guidelines, is the collection of data from service providers through the Central Office Code Utilization Survey (COCUS).³⁷ The COCUS solicits data on actual and projected CO code utilization for each NPA in the NANP, which the NANPA uses in order to project NPA exhaust in connection with area code relief planning and implementation.³⁸ A third effort is the development by the NANC of a set of interim audit

³⁵ A split forces half the consumers to change area codes and use ten or eleven digits to dial numbers in the old area code; an overlay, while allowing all customers to retain the same number, requires all customers to dial ten digits for all local calling, for both inter- and intra-NPA calls. *See* Colorado Commission comments at 3.

³⁶ *See* discussion *infra* Section IV.A.

³⁷ *See* 47 C.F.R. § 52.13(c)(4); CO Code Guidelines at §§ 6.4, 6.6, 9.1. The NANPA collects information on NXX code utilization and projected NXX code demand from the industry. Prior to 1998, this function was performed by the regional Bell Operating Companies, which served as central office code administrators.

³⁸ As discussed later in this Notice, *see* Section IV.D, although the Commission's rules mandate that the NANPA collect COCUS data, there is no parallel regulation or rule that requires carriers to provide the requested data.

procedures for the NANPA to use in determining whether selected service providers are in compliance with the CO Code guidelines.³⁹

28. Additionally, the industry in January 1999 finalized guidelines for the administration of thousands-block pooling,⁴⁰ which uses the capabilities of Location Routing Number (LRN)⁴¹ Local Number Portability (LNP) to allocate telephone numbers to service providers in blocks of 1,000 numbers, rather than in entire NXX blocks containing 10,000 numbers each. Two states have initiated thousands-block pooling trials in an effort to optimize their numbering resources,⁴² and several other states have conducted extensive studies on the impacts of thousands-block number pooling in some or all NPAs within the state.⁴³

³⁹ See NANC Meeting Minutes, Feb. 17-18, 1999. The NANPA solicited volunteers to be among the first service providers to be audited. During the interim audits, there are no sanctions, such as withholding of numbering resources, for carrier discrepancies or failure to comply with industry guidelines. Development of permanent audit procedures is ongoing.

⁴⁰ Thousand Block (NXX-X) Pooling Administration Guidelines, Draft (INC 99-0127-023) (rev. Jan. 27, 1999) (Thousand Block Pooling Guidelines). This document is available at <http://www.atis.org/atis/clc/inc/incdocs.htm>.

⁴¹ Location Routing Number (LRN) is a method used for number porting, which was recommended by the industry and state/regional workshops, and adopted by the Commission in Telephone Number Portability, *Second Report and Order*, CC Docket No. 95-116, 12 FCC Rcd. 12281, 12283 (1997) (*Telephone Number Portability Second Report and Order*).

⁴² The Illinois Commission began a mandatory thousands-block pooling trial in the 847 NPA in June 1998. Petition for Declaratory Ruling and Request for Expedited Action on the July 15, 1997 Order of the Pennsylvania Public Utility Commission Regarding Area Codes 412, 610, 215, and 717, *Memorandum Opinion and Order and Order on Reconsideration*, CC Docket No. 96-98, 13 FCC Rcd. 19009, 19029 (1998) (*Pennsylvania Numbering Order*). Recent reports indicate that a significant number of NXXs were saved as a result of the Illinois pooling trial. See Illinois Number Pooling Trial Within NPA 847 Interim Report (Apr. 26, 1999) (estimating a savings of 137 NXX codes as a result of pooling). This document is available at <http://www.numberpool.com/POOL/pac.htm>. The New York Commission began voluntary thousands-block pooling trials in the 212 NPA in July 1998, and in the 718 NPA on Jan. 1, 1999. In New York's trial, a smaller number of NXXs were saved as a result of pooling; the New York Commission attributes this limited success to the fact that the trial was voluntary, rather than mandatory. See New York State Department of Public Service Petition for Additional Delegated Authority to Implement Number Conservation Measures, filed Feb. 19, 1999, at 7.

⁴³ E.g., Colorado Telephone Numbering Task Force Third Report to the Colorado Public Utilities Commission Statewide Pooling, December 31, 1998, p. 12; Texas Commission comments at 9 and Attachment 10.

29. *1998 NANC Numbering Resource Optimization Report (NANC Report).* Pursuant to a request from the Common Carrier Bureau,⁴⁴ the NANC in October 1998 provided a detailed report evaluating a number of measures that may be used to optimize the use of telecommunications numbering resources. The first category, "Measures that Affect Local Calling," includes rate center consolidation, extended local calling, and inconsistent rate centers (IRCs). These measures seek to reduce the demand for central office codes by either reducing the number of rating areas within an NPA, or eliminating the need for carriers to obtain numbering resources within each rate center in an NPA in order to provide service throughout the NPA. The second category, "Measures that are LRN-Based," includes measures that are dependent on the existence of local number portability: individual telephone number (ITN) pooling, thousands-block number pooling, unassigned number porting, and location portability. The final category, "Measures that do not Require Local Number Portability," is a collection of administrative and technological methods related to the management of numbering resources, and includes NXX code sharing, code sharing using route indexing, mandatory ten-digit dialing, industry assignment guidelines, overlays, reducing the demand for telephone numbers, and geographic splits.

30. The Bureau placed the NANC Report on public notice shortly after its receipt.⁴⁵ The Public Notice specifically solicited comments on 6 of the 14 measures discussed in the report: extended local calling areas, mandatory ten-digit dialing, industry assignment guidelines, thousands-block pooling, individual telephone number pooling, and unassigned number porting. The Bureau received comments from 48 parties.⁴⁶

B. General Inquiries

31. *Costs and benefits comparison.* In addition to general information on the viability and desirability of the numbering resource optimization measures examined herein, we seek specific comment on the relative costs and benefits, both financial and societal, of implementing each measure. It would be particularly helpful for commenters to weigh the cost of extending the life of the current NANP through the various proposed numbering optimization strategies against the projected cost of expansion of the NANP, based on the assumption that continuing current number allocation and use practices will lead to the premature exhaust of the NANP.

⁴⁴ See Letter from A. Richard Metzger, Jr., Chief, Common Carrier Bureau, to Alan Hasselwander, Chairman, North American Numbering Council, dated Mar. 23, 1998.

⁴⁵ See Common Carrier Bureau Seeks Comment on North American Numbering Council Report Concerning Telephone Number Pooling and Other Optimization Measures, *Public Notice*, DA 98-2265, NSD File No. L-98-134 (rel. Nov. 6, 1998). Comments on the NANC Report were due on December 21, 1998.

⁴⁶ See list of commenters at Appendix A.

32. Although the time frame for NANP exhaust cannot be determined with precision, the NANPA developed two models that predict the NANP will be exhausted in the 2006 to 2012 time frame.⁴⁷ The NANC established an industry working group to review the NANPA's exhaust projections.⁴⁸ While the NANPA's projections are not universally supported by industry experts, there is general agreement that the expected life of the NANP is limited. We seek comments on the design and assumptions contained in the NANPA's NANP Exhaust Model, and any alternative projections of NANP exhaust that we should consider.

33. In addressing when action needs to be taken to address NANP exhaust, it is critical to establish a benchmark estimate of how long it would take to develop and implement an expanded NANP. For example, if it is estimated that the process will take ten years, then it is imperative that the process begin immediately and that we adopt conservation measures sooner rather than later. If it is estimated to take only two years, there is less urgency to begin work immediately, and more time can be devoted to evaluating alternative options that can extend the life of the existing NANP. Industry numbering experts and the NANPA are already exploring options for NANP expansion.⁴⁹ Based on their work, we believe that ten years may be a conservative time frame for rolling out a new NANP. We seek comment on this estimate and request that commenters provide alternative projections. Commenters should provide a detailed analysis of any projections provided.

34. We also seek comment on what costs will be incurred in expanding the NANP. We note that available estimates for the total cost of expanding the NANP vary greatly; preliminary estimates of the total costs (telecommunications industry and societal combined) discussed at the February 1999 NANC meeting established a range of \$50 to \$150 billion.⁵⁰ These estimated costs are substantial, and would, we believe, significantly outweigh the cost of implementing all or most of the numbering resource optimization solutions proposed in this Notice. Moreover, we believe that extending the life of the NANP by as little as ten years

⁴⁷ Number Utilization Study at 17. One model is a top-down model that projects NANP exhaust based on a trend of historic NPA consumption. The second is a bottom-up model that projects NANP exhaust based on the projected demand for NXX codes. Both models yield similar results. *See also* NANP Exhaust Study.

⁴⁸ NANC Meeting Minutes, Feb. 17-18, 1999. *See also* Report of the NANP Exhaust Review Team (May 3, 1999) concluding that using alternative, but reasonable, assumptions, NANP exhaust is likely to occur in the 2005 to 2016 time frame).

⁴⁹ *See* North American Numbering Plan (NANP) Expansion Report, Draft (rev. March 1999). This document is available at <<http://www.atis.org/atis/clc/inc/incwdocs.htm>>.

⁵⁰ NANC Meeting Minutes, Feb. 17-18, 1999.

could yield substantial benefits.⁵¹ We seek comment on whether these preliminary estimates are within a reasonable range or whether the actual costs can be expected to be materially higher or lower. Commenters providing estimates should separate their cost estimates into telecommunications industry costs and societal costs.

35. *Adoption of rules.* Many of the proposals set forth in this Notice build upon procedures and practices currently governed by voluntary industry guidelines, which lack enforceability. We are mindful of the deregulatory intent of the 1996 Act, and do not seek to impose any unnecessary regulation. Under the current system for allocation of numbering resources, however, it is difficult for the industry to police itself effectively, given that each carrier has an incentive to obtain as many numbers as possible, especially in places where area codes are rapidly reaching exhaust. In such light, we seek specific comment on which of the measures we discuss in the Notice should be adopted as FCC rules. Alternatively, should we direct the NANC to ensure that certain of these measures are incorporated into existing industry guidelines? Further, we seek comment on the suggested interplay between FCC rules and industry guidelines on numbering optimization. For example, should we set forth general federal requirements for numbering resource optimization, and leave the detailed implementation of these requirements to industry bodies?

IV. ADMINISTRATIVE MEASURES

A. Introduction

36. As noted above, one of the major drivers of number exhaust is the lack of discipline in the process by which numbering resources are administered and allocated. Currently, the procedures for the allocation of numbering resources within the geographic area codes of the NANP are set forth in the CO Code Guidelines, which were developed and are

⁵¹ To develop a rough estimate of the benefits that could be realized by extending the life of the existing NANP, we provide for illustrative purposes the following analysis. Assuming that the total societal cost of replacing the NANP is \$100 billion and that the real cost of capital is 3%, the present value of replacing the NANP in 10 years would be \$74.4 billion. In other words, \$74.4 billion invested today at the real cost of capital will yield \$100 billion in ten years. If some combination of number optimization measures can extend the NANP another ten years—so that it does not have to be replaced until year 20—the present value of \$100 billion would be \$55.4 billion. This means that extending the NANP in ten years is worth \$19 billion in today's dollars (the difference between \$74.4 billion and \$55.4 billion). If the NANP were to last 20 years without numbering optimization and 30 years with it, the benefits would be approximately \$14.2 billion (the present value of \$100 billion in 30 years is \$41.2 billion). In either case, these results suggest that the benefits of numbering optimization could be substantial. They would be even greater (\$33 billion) if numbering optimization extended the life of the NANP 20 years.

maintained by the Industry Numbering Committee (INC).⁵² Among other things, these guidelines set forth criteria for the allocation of NXX codes, the responsibilities of the Central Office Code Administrator,⁵³ applicants and code holders, as well as NXX code reclamation requirements and certain code conservation measures. The INC updates the guidelines as needed or at the direction of the NANC.⁵⁴ The guidelines were originally developed at the direction of the FCC⁵⁵ and FCC rules require the NANPA to perform its numbering administration functions in accordance with the guidelines.⁵⁶

37. As is identified in greater detail below, the current guidelines do not impose adequate constraints on a carrier's ability to obtain and stockpile numbers for which it has no immediate need. To address these shortcomings, in this section, we set forth a number of administrative proposals intended to inject a greater degree of discipline into the process of allocating and administering numbering resources. Generally speaking, these proposals would place an increased responsibility on carriers to provide information about their utilization of the numbering resources that have already been allocated to them. Because the measures proposed in this section do not require implementation of new systems or technologies, we believe that they would impose minimal costs on the industry (and therefore, indirectly, on the consumer), and could likely be put into place in a relatively short time period. Further, because these measures do not rely on the LNP platform, as do certain of the measures discussed in Section V, they may be applicable immediately to all service providers that use numbering resources, regardless of whether the provider has yet deployed (or, for that matter, will ever deploy) number portability. We further believe that implementing these measures will increase the efficiency with which carriers use numbers, by tying allocation of new numbering resources to need, increasing carrier accountability for numbering utilization, and

⁵² The INC is a standing committee of the Carrier Liaison Committee (CLC), one of the fora sponsored by the Alliance for Telecommunications Industry Solutions (ATIS). The INC addresses issues associated with the planning, administration, allocation, assignment and use of numbering resources and related dialing considerations, and has developed guidelines for the assignment and administration of all types of numbering resources, as well as for the administration of area code relief.

⁵³ Transition of Central Office Code Administration responsibilities to the NANPA began on February 20, 1998, and is scheduled to be completed by June 1999.

⁵⁴ See Letter from NANC Chairman Alan C. Hasselwander to INC Moderator dated July 30, 1997. The CO Code Guidelines were most recently updated on April 26, 1999.

⁵⁵ CO Code Guidelines at § 1.0 n.1.

⁵⁶ In pertinent part, 47 C.F.R. § 52.13(d) states, "The NANPA . . . shall administer numbering resources in an efficient and non-discriminatory manner, in accordance with Commission rules and regulations and the guidelines developed by the INC and other industry groups pertaining to the administration and assignment of numbering resources"

speeding the return of unused codes. We seek comment on the costs and benefits of implementing each of the measures discussed in Section IV.

38. We recognize that the industry, through the NANC, has been working to develop recommendations with respect to a number of the proposals outlined below, in particular in the areas of standardized number status definitions, enhanced utilization and forecast data reporting, and audits and enforcement. In many cases, we have drawn upon the substantial work efforts of industry bodies in developing our own proposals. With respect to several of the measures addressed in this section, we expect to receive recommendations from the NANC before the close of the comment cycle in this proceeding,⁵⁷ and we invite commenters to address the NANC proposals and recommendations in their comments in response to this Notice. We specifically request the NANC to make recommendations regarding which, if any, of the measures discussed in Section IV should be adopted as FCC rules.⁵⁸ We request that the NANC provide these recommendations concurrently with the deadline for receipt of reply comments on this Notice.

B. Definitions of Categories of Number Usage

39. As a preliminary matter, we tentatively conclude that a uniform set of definitions for the status of numbers should be established for purposes of implementing the proposals set forth in this Notice. We believe that uniform definitions are essential to effective communications between carriers, the NANPA, and regulatory entities -- a common understanding of definitions helps to ensure that all participants in the number administration process are using a common "language." As such, uniform definitions will improve our ability to collect accurate data on number utilization and demand, which in turn will improve our ability to forecast number exhaust, and will assist in enforcing the CO Code Guidelines.

40. We note that the industry already has devoted a substantial degree of effort to establishing a uniform set of number status definitions.⁵⁹ Most of the definitions set forth in

⁵⁷ See, e.g., Letter from Yog R. Varma, Deputy Chief, Common Carrier Bureau, to Alan C. Hasselwander, Chairman, NANC, dated April 15, 1999, requesting that the NANC provide recommendations on a revised COCUS model by June 30, 1999.

⁵⁸ For example, as discussed in Section IV.D, *infra*, the NANC has already recommended that the Commission adopt rules requiring carriers to report forecast and utilization data to the NANPA. See NANC Meeting Minutes, Nov. 18-19, 1998.

⁵⁹ The INC recently concluded work on a common set of telephone number status definitions, which are included in the CO Code Guidelines. See CO Code Guidelines at § 13.0. The NANC is currently working on the definition of reserved telephone numbers, and is expected to provide a recommendation to the Commission in the near future. A number of the parties that commented in this proceeding support the industry's efforts to

this section are drawn directly from industry proposals. As a general matter, we seek comment on whether these uniform number status definitions should be codified as part of the FCC's rules, as are certain definitions that relate to the status of toll free numbers.⁶⁰ In the alternative, we seek comment on whether uniform number status definitions should be incorporated into the CO Code Guidelines and the Thousand Block Pooling Guidelines, as intended by the INC.⁶¹ We further seek comment on whether all of the proposed definitions are necessary and useful, as well as on whether we should adopt any additional number status definitions, such as definitions related to telephone numbers allocated to resellers by facilities-based carriers. We seek comment on the following set of proposed number status definitions.

41. An *administrative number* is one which is not or should not be assigned to a customer, because it is in one of the following categories: employee/official number; Location Routing Number (LRN); test number; Temporary Local Directory Number (TLDN); or Wireless E911 ESRD/ESRK.⁶² The referenced subcategories are as follows:

- An *employee/official number* is a number assigned by a service provider for its own internal business purposes.⁶³ We seek comment on the types of internal business purposes for which carriers use employee/official numbers. We further seek comment on whether this definition should be tightened, either by specifying appropriate uses for employee/official numbers, or by identifying uses that are not appropriate.

- A *Location Routing Number (LRN)* is the ten-digit (NPA-NXX-XXXX) number assigned to a switch or point of interconnection (POI) used for routing in a permanent local number portability environment.⁶⁴

arrive at common number status definitions. See, e.g., Ameritech comments at 5-7; MCI WorldCom comments at 25-26; PCIA comments at 13.

⁶⁰ See 47 C.F.R. § 52.103.

⁶¹ See Ameritech comments at 5-7; AT&T comments at 18-19; SBC comments at 23-24.

⁶² CO Code Guidelines at § 13.0.

⁶³ *Id.*

⁶⁴ *Id.* A POI is the physical location where a carrier's circuits interconnect for the purpose of interchanging traffic on the Public Switched Telephone Network (PSTN).

- A *test number* is a number assigned for inter- and intra-network testing purposes.⁶⁵ We seek comment on the types of purposes for which carriers use test numbers. We also seek comment on whether this definition should be tightened, either by specifying appropriate testing uses for numbers, or by identifying uses that are not appropriately termed "testing."

- A *Temporary Local Directory Number (TLDN)* is a number dynamically assigned on a per-call basis by the serving wireless service provider to a roaming subscriber for the purpose of incoming call setup.⁶⁶

- A *wireless E911 emergency services routing digits/key (ESRD/ESRK) number* is a ten-digit number used to route an E911 call to the appropriate Public Service Answering Point (PSAP) when that call is originating from wireless equipment.⁶⁷ If a NANP telephone number is used as an ESRD or ESRK, this number cannot be assigned to a customer.

42. An *aging number* is a number in the aging process.⁶⁸ Aging is the process of making a disconnected telephone number unavailable for re-assignment to another subscriber for a specified period of time. An aging interval includes any announcement treatment period, as well as the blank telephone number intercept period.⁶⁹ A number is disconnected when it is no longer used to route calls to equipment owned or leased by the disconnecting

⁶⁵ *Id.*

⁶⁶ *Id.*

⁶⁷ *Id.* The INC definition further specifies that the ESRD identifies the cell site and sector of the call origination in a wireless call scenario. The ESRK uniquely identifies the call in a given cell site/sector and correlates data that is provided to a PSAP by different paths, such as the voice path and the Automatic Location Identification (ALI) data path. Both the ESRD and ESRK define a route to the proper PSAP. The ESRK alone, or the ESRD and/or Mobile Identification Number (MIN), is signaled to the PSAP where it can be used to retrieve from the ALI database the mobile caller's call-back number, position, and the emergency service agencies (e.g., police, fire, medical, etc.) associated with the caller's location. The ESRD/ESRK is not used in the wireline context.

⁶⁸ CO Code Guidelines at § 13.0.

⁶⁹ The blank telephone number intercept period is the period when incoming callers to a disconnected number receive a message redirecting them to a new number to reach the party called.

subscriber of record. We seek comment on the standard aging intervals currently used by carriers, as well as on whether we should set limits on the amount of time a number may remain in "aging" status, e.g., 90 to 120 days.⁷⁰

43. An *assigned number* is a number that is: (a) working in the PSTN under an agreement (e.g., tariff, contract) at the request of a specific customer for that customer's use, or (b) not yet working but has a customer service order pending.⁷¹ We seek comment also on whether this definition should be further refined by limiting the time during which a customer service order may be considered to be "pending," e.g., 3 to 5 days.

44. A *dealer numbering pool* is a set of numbers allocated by a service provider to a retail dealer for use in the sale and establishment of service on behalf of that service provider.⁷² We seek comment regarding how carriers currently classify these numbers for the purpose of determining available inventories. We seek comment on how dealer numbering pools should be treated, and what, if any, limitations should be imposed in connection with assigning numbers to dealer numbering pools.

45. A *ported-out number* is an assigned number that is ported from the code holder/block holder to another service provider.⁷³ With respect to ported-out numbers, we seek comment on how the porting carrier and the ported-to carrier should treat these numbers for reporting purposes. Should both of these carriers treat the number as unavailable for assignment? Should the ported-to carrier be entitled to treat the ported-out number as an assigned number for purposes of calculating its utilization level?

⁷⁰ The INC is currently in the process of drafting guidelines regarding Aging and Administration of Disconnected Telephone Numbers, Draft (March 22, 1999). This document is available at <<http://www.atis.org/atis/clc/inc/incwdocs.htm>>. These draft guidelines propose aging intervals for residential telephone numbers that range from a minimum of 30 days to a maximum of 90 days; for business numbers, the range proposed is a minimum of 90 days to a maximum of 365 days; for high volume calling numbers, such as time and weather services or ticket vendors, an 18-month aging interval is proposed.

⁷¹ CO Code Guidelines at § 13.0.

⁷² *Id.*

⁷³ *Id.*

46. *Reserved number*: The industry has been working to craft a definition of reserved telephone number.⁷⁴ To date, the industry has crafted a proposed set of characteristics for a reserved number, which include:

- (1) A reserved number is a non-working number.
- (2) A reserved number has been set aside by a service provider at the request of a specific end-user customer for that customer's future use.
- (3) The reserved status of a telephone number is reflected in the telephone number administration system of the service provider in whose inventory the numbers are being reserved.
- (4) The name of the party requesting the reservation is in the service provider's administration system.
- (5) The end user is aware of the reservation of numbers.
- (6) A reserved number has some restrictions with respect to timeframe and quantity.
- (7) Numbers reserved by a service provider on behalf of a customer may be ported where number portability is available and where any portion of the associated working numbers have been or will be ported from that service provider.⁷⁵

47. In addition, the industry has set forth the following broad guidelines with respect to reserved numbers:

- (1) Service providers must ensure number reservations are not used for the purposes of hoarding.
- (2) All classes of customers must be treated equally under the application of reserved number guidelines.
- (3) Reserved number guidelines must apply equally to all service providers making telephone number reservations on behalf of their end-user customers.
- (4) Reserved number guidelines must apply equally to service providers making use of telephone numbers for their end user customers from another service provider's inventory (e.g., resellers, Type 1 interconnection for Commercial Mobile Radio Service (CMRS) carriers).
- (5) The reserved number intervals begin for all customers regardless of any previous reservations, on the effective date of this process.
- (6) The original interval limitation established for given customers shall continue uninterrupted if or when the customer changes service providers.⁷⁶

⁷⁴ See NANC Meeting Minutes, Dec. 16-17, 1999, at 19.

⁷⁵ See NRO Report to the NANC, Apr. 21, 1999.

⁷⁶ *Id.*

48. We are quite concerned about how reserved numbers are categorized, and whether they should be categorized as "unavailable for assignment." We believe that an appropriately narrow definition must be adopted for both "reserved number" and "reserved code" to prevent potential abuse, e.g., a carrier's use of reserved status as a means to amass and retain excessive inventories of numbers for which it has no immediate need. In this light, we seek comment on the NANC's working set of characteristics set forth above, and whether an appropriately narrow definition and/or set of reserved number guidelines can be fashioned from them. In the alternative, we seek comment on MCI WorldCom's proposal that a "reserved number" be defined as a number set aside by a service provider under the provisions of a legally enforceable written agreement at the request of a specific customer for future use.⁷⁷

49. Moreover, we seek comment on whether time limits should be imposed on the amount of time a code may be held in reserved status. For example, our toll free assignment rules specify that a number may be held in reserved status for only 45 days.⁷⁸ We seek comment on whether 45 days is an appropriate period of time for a number to be held in reserved status. In the alternative, we seek comment on whether carriers should be required to pay a fee for numbers held in reserved status. We note that it is the practice of some carriers to require such a fee from parties for whom they are reserving numbers, in order to ensure that the request for reservations is bona fide. We seek comment on whether the same type of assurance, via fee, should be required from reserving carriers themselves.

50. A number in *soft dial tone* is a number temporarily assigned to line equipment and facilities which permits restricted dialing (e.g., operator, 911, service provider business office).⁷⁹ We seek comment concerning the purposes for which carriers use soft dial tone, and whether these numbers are best categorized as a subset of administrative numbers.

51. Telephone numbers *available for assignment* are numbers within existing codes (NXX) or blocks (NXX-X) that are available for assignment to subscriber access lines or their equivalents within a switching entity/point of interconnection (POI), and are not categorized as assigned, administrative, aging, or reserved.⁸⁰

⁷⁷ MCI WorldCom comments at 25-26.

⁷⁸ See 47 C.F.R. § 52.103(9)(b).

⁷⁹ CO Code Guidelines at § 13.0.

⁸⁰ *Id.*

52. Telephone numbers *unavailable for assignment* are numbers that are characterized as administrative, aging, assigned, or reserved.⁸¹ We seek comment on whether this number status definition promotes our numbering optimization objectives, or whether it should be narrowed, possibly by excluding reserved numbers.

53. In the CO Code Guidelines, *working telephone numbers* are defined as the quantity of telephone numbers within existing NXX codes that are assigned to working subscriber access lines or their equivalents, e.g., direct inward dialing trunks, paging numbers, special services, temporary local directory numbers (TLDNs), etc., within a switching entity or POI.⁸² This definition seems to overlap with the definition of an *assigned number* set forth above. Also, the definition of a *working telephone number* contradicts the definition of an *assigned number* because the *working telephone number* definition considers TLDNs to be working numbers, but the definition of an assigned number does not. For these reasons, we seek comment on whether the definition of *working telephone number* should include TLDN and whether the definition of *working telephone number* should be included in a comprehensive set of telephone number status definitions.

C. Verification of Need for Numbers

54. *Current central office code assignment procedures.* Under the current CO Code Guidelines, NXX codes are assigned to entities for use at a switching entity or POI that they own or control.⁸³ The NANPA must assign NXX codes pursuant to the assignment criteria on a first-come, first-served basis.⁸⁴

55. An "initial" code is the first NXX code assigned to the carrier at a new switching entity, POI or unique rate center, and the administrator is to assign initial codes to the extent required to terminate traffic.⁸⁵ To obtain an initial code, the applicant must certify that a need exists due to routing, billing, regulatory or tariff requirements.⁸⁶ Although

⁸¹ *Id.*

⁸² *Id.*

⁸³ *Id.* at §§ 3.1, 4.1.

⁸⁴ *Id.* at § 4.4.

⁸⁵ *Id.* at § 4.1.

⁸⁶ *Id.* at § 4.1.2. An applicant may also obtain an initial NXX code in order to establish an initial Location Routing Number (LRN) per POI or switching entity for each Local Access and Transport Area (LATA), if the carrier has no existing resources available for LRN assignment. *Id.* at § 4.1.2.1.

applicants may be required to provide the administrator with technical support for initial code requests, the guidelines specify that utilization criteria or projection will not be used to justify an initial NXX code assignment.⁸⁷ The applicant for an initial code must be licensed or certified to operate in the area for which the code is requested, and must demonstrate this to the NANPA.⁸⁸

56. A "growth" code is an additional NXX code requested for an established switching entity, POI or rate center when the telephone numbers available for assignment in previously assigned NXX codes will not meet expected demand.⁸⁹ To obtain a growth code, an applicant must certify that existing codes associated with that switch, POI or rate center will exhaust within 12 months, and must prepare a Months-to-Exhaust Worksheet.⁹⁰ Applicants are required to complete the Months-to-Exhaust Worksheet, and to maintain it in their files for audit purposes; recent revisions to the CO Code Guidelines also require carriers to submit the Months-to-Exhaust Worksheet to the NANPA when applying for growth codes.⁹¹ In jeopardy NPAs, code holders must certify that existing NXX codes will exhaust within six months.⁹²

57. *Applicant demonstration of readiness or need.* As shown above, the current CO Code Guidelines do not require applicants to demonstrate their readiness to utilize initial codes, or their need to obtain growth codes. The absence of such controls may lead some carriers to obtain numbers that they are unable to use in the near term. This behavior is especially likely in NPAs that are approaching jeopardy, as carriers may be concerned that if they do not obtain an excess supply of numbers, they may not be able to maintain an adequate inventory once jeopardy has been declared. In this section, we propose certain verification measures designed to prevent carriers from obtaining numbering resources that they do not need in the near term.

⁸⁷ *Id.* at § 4.1.

⁸⁸ *Id.* at § 4.1.4.

⁸⁹ *Id.* at § 13.0.

⁹⁰ *Id.* at § 4.2.1. The CO Code Assignment Certification Worksheet-TN Level (Months-to-Exhaust Worksheet), set forth in Appendix B to the CO Code Guidelines, requests data on telephone numbers available for assignment, growth history for the past six months, and projected demand for the coming 12 months.

⁹¹ See CO Code Guidelines at Appendix B n.1.

⁹² Jeopardy is defined as a situation where the forecasted or actual demand for NXX resources will exceed the known supply during the planning/implementation interval for relief. CO Code Guidelines at § 13.0. In jeopardy NPAs, the Months-to-Exhaust Worksheet requests data on telephone numbers available for assignment, growth history for the past six months, and projected demand for the coming six months.

58. *Initial codes.* With respect to an applicant's ability to obtain an initial code, we seek comment on what type of showing would be appropriate. It is not our intent to circumscribe any carrier's ability to obtain initial codes in order to initiate provision of service or to expand its service "footprint," but we wish to determine whether requesting additional information from applicants for initial codes could prevent actual or potential abuses of the process. In particular, we are concerned that under the current guidelines, certain new entrants may obtain numbering resources well in advance of when they will actually be able to provide service, which results in a highly inefficient distribution of numbering resources. To prevent this type of situation, we seek comment on whether applicants should be required to make a particular showing regarding the equipment they intend to use to provide service, the state of readiness of their network or switches, or their progress with their business plan, prior to obtaining initial codes, or whether any other type of showing should be required.

59. We are also concerned about instances in which carriers have obtained initial codes for use in areas in which they are not licensed or certificated.⁹³ We seek comment on whether applicants should be required to submit evidence of their license/certificate with their applications for initial codes, or conversely, whether we should place an obligation on the NANPA to check the status of an applicant's license or certification with the relevant state commission prior to issuing the requested initial code. To the extent that commenting parties support the latter proposal, they should comment on whether placing this obligation on the NANPA will slow down the time in which the NANPA processes initial code applications, and if so, by how much. We seek comment generally on the most efficient, least burdensome way to ensure that applicants do not obtain NXX codes in areas where they are not licensed or certificated. For example, would a general certification by a carrier that it intends to implement service within a specific timeframe adequately assure that carriers only obtain initial codes in areas where they are licensed or certificated?

60. *Growth codes.* With respect to carriers' ability to obtain growth codes, we tentatively conclude that applicants should be required to provide data that supports their need to obtain additional numbering resources, as a means of preventing the building and carrying of excessive inventories. While verification of need will not eliminate an applicant's incentive to hoard, it will reduce the applicant's ability to hoard numbering resources without being detected, by providing a mechanism for oversight of applications. We further tentatively conclude that the NANPA may not allocate additional numbering resources to an applicant,

⁹³ The CO Code Guidelines require that carriers must be certified before they may obtain any NXX codes. CO Code Guidelines at § 4.1.4. Wireline carriers seeking to provide service in a state must obtain a certificate from the state authorizing them to do so. Fixed wireless carriers may also be subject to state certification requirements, but states are specifically preempted from regulating entry of CMRS providers. See 47 U.S.C. § 332(c)(3)(A). However, all wireless carriers seeking to use spectrum to provide service in particular geographic areas must be licensed in those areas, under Title III of the Communications Act, by the Commission.

unless the applicant has made a satisfactory demonstration of need. We seek comment on these tentative conclusions. _

61. *Method of verification of need.* As outlined above, applicants are currently required to complete a Months-to-Exhaust Worksheet prior to applying for growth codes, and under recent revisions to the CO Code Guidelines, to provide the worksheet to the NANPA.⁹⁴ We seek comment on whether requiring applicants to submit the Months-to-Exhaust Worksheet along with an application for a growth code would be an adequate demonstration of need for additional numbering resources.⁹⁵ We further seek comment on whether NANPA should be required to evaluate the Months-to-Exhaust projection prior to allocating the requested code. We are concerned, however, about using the Months-to-Exhaust Worksheet as a proxy for need, because the Months-to-Exhaust analysis is forward-looking, and cannot be verified until after the carrier has already obtained the requested NXX code. Further, the Months-to-Exhaust forecast is largely subjective and dependent on good faith projections by each carrier. We seek comment on whether there are modifications to the current Months-to-Exhaust forecast that might alleviate these concerns.

62. As an alternative, we seek comment on whether applicants should be precluded from requesting growth codes from the NANPA until they have achieved a specified level of numbering utilization (or "fill rate") in the area in question. Several commenters support use of number utilization thresholds as a means of verifying an applicant's need for numbers.⁹⁶ We believe that a utilization threshold may be superior to a Months-to-Exhaust forecast because it is an objective measurement that may be verified before the applicant obtains numbering resources. Moreover, a utilization threshold standard reflects the applicant's actual historical experience in efficiently utilizing numbering resources, rather than marketing projections.

63. *Setting a utilization rate.* We seek comment generally on whether a percentage utilization threshold should be adopted, and if so, on the appropriate level for that threshold.⁹⁷

⁹⁴ See *supra* ¶ 56 and note 91.

⁹⁵ A number of commenters support using the Months-to-Exhaust forecast as verification for carrier need for numbers. See, e.g., AirTouch comments at 4, 21-24; Bell Atlantic comments at 6-7; Bell Atlantic Mobile comments at 13; PrimeCo comments at 6-7.

⁹⁶ AT&T comments at 13-14; New York Commission comments at 14-18; Maine Commission comments at 5-6; SBC comments at 22-24. But see, e.g., Bell Atlantic comments at 6.

⁹⁷ See, e.g., New York Commission comments at 15-16 (suggesting that 65% to 85% is an appropriate range for a utilization requirement). On January 28, 1999, CTIA filed a proposal suggesting several numbering optimization measures, including the setting of a utilization rate in jeopardy NPAs. See Letter from Michael

We further seek comment on whether we should set a uniform nationwide utilization threshold or, in the alternative, establish a range within which state commissions may set the utilization rate. We also seek comment on whether it is possible to set a uniform utilization level that applies to all types of service providers, or whether there may be a need to set different utilization levels for different types of services or service providers. In addition, we seek comment on whether utilization levels, if adopted, should gradually be increased over time, in order to provide carriers time to adjust to the new requirements, and to improve their utilization performance over time.⁹⁸ We further seek comment on whether the utilization threshold standard should apply nationwide, or only in areas that are experiencing the most difficulties with number exhaust, e.g., the largest 100 metropolitan statistical areas (MSAs) and in area codes where a jeopardy condition has been declared. Alternatively, we seek comment on whether the smaller MSAs should have a lower utilization rate than the largest 100 MSAs. We seek comment on the costs and benefits of establishing a utilization threshold for these areas.

64. *Calculating utilization levels.* We also seek comment on how utilization thresholds should be calculated. We propose that a carrier's utilization rate in a given geographic area (NPA or rate center) should be calculated by dividing the quantity of "telephone numbers unavailable for assignment"⁹⁹ (the numerator) by the total quantity of telephone numbers in all NXXs assigned to the carrier within the appropriate geographic area (the denominator), and multiplying the result by 100.¹⁰⁰ We are concerned, however, that certain number status categories, including reserved numbers, numbers allocated to resellers, and numbers in dealer numbering pools, may be used by carriers to stockpile numbers. That is, carriers may assign NXX codes or portions thereof to these categories, and then count these codes or numbers as being utilized, even when they are not being used to provide any type of service. We are particularly concerned that the incentive to assign numbers to these categories for such strategic purposes may increase if we move to a number allocation regime based on utilization thresholds, as proposed. Accordingly, we seek comment on whether these categories of numbers should be excluded from the "numerator," or whether there are other ways to prevent the types of abuses about which we are concerned.

Altschul, CTIA, to Yog Varma, FCC, dated Jan. 28, 1999 (CTIA Jan. 28, 1999, *ex parte*), attaching CTIA Jan. 28, 1999 Numbering Proposal (suggesting that the current utilization rate in a jeopardy NPA should be set at 60%, and that this rate should be increased to 65% in the year 2000, and then to 70% in the year 2001). PrimeCo urges the Commission to reject fill rates. PrimeCo comments at 6-7.

⁹⁸ CTIA Jan. 28, 1999 Numbering Proposal.

⁹⁹ *See supra* ¶ 52.

¹⁰⁰ The denominator must include all NXX codes assigned, regardless of whether the NXX codes have been activated in the Local Exchange Routing Guide (LERG).

65. In most cases, newly acquired and activated NXX codes will have lower utilization rates than older, more "mature" NXXs. Accordingly, we seek comment on whether applicants should have the option of excluding from their utilization rate calculation all NXXs obtained in the period immediately preceding the carrier's request for additional numbering resources (i.e., all newly acquired NXXs).¹⁰¹ We seek comment on whether "newly acquired" NXXs should be defined as those assigned to the applicant by the NANPA during the 90 days prior to the new application, or whether 120 days is a more appropriate period for exclusion.¹⁰² We propose that carriers wishing to take advantage of such an exclusion must exclude the newly acquired NXXs from both the numerator and the denominator of their utilization rate calculation. Thus, to the extent that a carrier had begun to assign numbers from a newly acquired NXX, the numbers assigned may not be included in the numerator, if the entire NXX were not included in the denominator of the equation. We seek comment on this proposal. Wireless carriers have expressed concern that, because of the existence of seasonal fluctuations in demand for their services, the establishment of a utilization threshold will penalize them for not being able to utilize their NXXs immediately.¹⁰³ Therefore, we seek comment on whether the exclusion of newly acquired NXXs from the utilization rate calculation will accommodate these carriers' unique situation.

66. We further seek comment on whether utilization levels should be calculated on an NPA-wide or a rate center-wide basis. That is, should all of the NXX code resources that an applicant has been assigned in a particular NPA be included in the calculation of its utilization rate for the purposes of obtaining another NXX code in that NPA, or should the calculation be limited to only the NXX codes that have been assigned in the rate center in which the applicant wants an additional code? In particular, we seek comment on: a) which method more closely tracks how carriers actually use numbering resources; b) which method is least likely to result in strategic number acquisition behavior (or "gaming") by carriers; c) which method is least likely to result in carriers being unable to obtain numbering resources necessary to meet customer demand (for example, to expand service "footprint"); d) which method is least likely to have an anticompetitive effect on certain segments of industry; and e) which method would be less burdensome from a regulatory standpoint.

¹⁰¹ CTIA proposes that utilization thresholds be calculated by looking at data from "mature" NXX codes, which it defines as NXX codes that have been assigned to, and are available for use by, a carrier for at least 90 days. See CTIA Jan. 28, 1999 Numbering Proposal. See also Cellular Telecommunications Industry Association's Petition for Forbearance from Commercial Mobile Radio Services Number Portability Obligations and Telephone Number Portability, *Memorandum Opinion and Order*, WT Docket No. 98-229 and CC Docket No. 95-116, FCC 99-19 (rel. Feb. 9, 1999) (*CMRS LNP Forbearance Order*) at ¶¶ 46-47.

¹⁰² *CMRS LNP Forbearance Order* at ¶¶ 46-47.

¹⁰³ See, e.g., PrimeCo comments at 6-7.

67. In the event that we decide that utilization should be calculated on an NPA-wide basis, we seek comment on how regional variances in number utilization patterns should be taken into account. For example, some NPAs contain both suburban/rural and urban areas. In such "mixed" NPAs, carriers may have high utilization rates in rate center(s) located in a densely-populated areas of the NPA, and lower utilization rates in the more rural or suburban rate center(s) in the NPA. As a consequence, a carrier may be unable to meet an NPA-wide utilization rate, even when it is running into numbering shortages in particular rate centers in more densely-populated areas. Additionally, we seek comment on whether and how "mixed" NPAs should be identified, as well as on whether different utilization levels should be set for mixed NPAs. In the alternative, should applicants be entitled to obtain additional growth codes in a particular rate center within a "mixed" NPA by demonstrating an extraordinary level of utilization within that rate center; e.g., 85%?

68. *Impact on small carriers and new entrants.* We further seek comment on whether, in implementing a numbering utilization threshold, we should distinguish between carriers that have a small presence in a given NPA, or other appropriate geographic area, because they are either new market entrants or small carriers, and those that have a larger presence. Imposing the same utilization requirements on carriers with a small market presence as on those with a much larger presence may discourage market entry and competition, as well as diminish a smaller or newer carrier's ability to react to market demands.¹⁰⁴ We seek comment on whether, from a competitive standpoint, different utilization thresholds should apply to carriers with a small market presence, and if so, what should be considered to be a small market presence. For example, should we apply a graduated utilization threshold scheme to carriers, based on the number of NXX codes they have in a given NPA (e.g., 50% or lower utilization rate for carriers with up to five NXXs in the NPA, 60% for carriers with up to ten NXXs, etc.)? We emphasize that the different treatment afforded to small carriers would apply only to those carriers with few numbering resources.

D. Reporting/Record-keeping Requirements

69. It is necessary for the NANPA to collect information on the utilization of numbering resources and projected future demand for numbering resources in order to allocate numbering resources efficiently and to forecast NPA exhaust dates reliably. As we discuss in more detail in this section, we believe that it is necessary to strengthen the current system for forecast and utilization data collection, both to enhance the accuracy with which the NANPA may predict patterns of number usage and of NPA and NANP exhaust, and also to serve as a check on the ability of unscrupulous carriers to hoard numbers or otherwise abuse the number allocation and administration system.

¹⁰⁴ See, e.g., Vanguard comments at 3-4.

70. The need for better and more timely data on number usage and forecasted demand has grown much more acute as competition in the local exchange market has developed and the demand for numbers has rapidly increased. The current data reporting mechanisms were designed when the local exchange market was largely a monopoly; in that period, the industry and regulators had fewer concerns about how numbers were being utilized or whether carrier forecasts were indeed accurate. Today, however, as a result of the tremendous demand for numbers resulting from the recent opening of the local exchange market to competition, and the rapid growth of the wireless telecommunications industry, numbering resources are being allocated to carriers at an alarming rate.

71. *Current data collection mechanism: COCUS.* The current mechanism for forecast and utilization data collection is the Central Office Code Utilization Survey (COCUS). The NANPA administers the COCUS annually, which asks each carrier to provide information on the total number of NXX codes assigned to it in each NPA, as well as its forecasted demand for NXX codes over the next five years.¹⁰⁵ Code holders must provide additional numbering utilization data in NPAs in which a jeopardy condition has been declared.¹⁰⁶ The NANPA uses the COCUS data to monitor the use of NXX codes within each NPA and to forecast the date by which all NXX codes within each NPA will be assigned.¹⁰⁷

72. As currently configured, the COCUS has a number of shortcomings. First, because the COCUS was established through industry guidelines, carriers currently do not have a regulatory obligation to respond, which impedes the NANPA's ability to gather comprehensive and accurate number utilization and forecast information. Carrier response has not been sufficient to enable the NANPA to gather the information it requires.¹⁰⁸ Second, COCUS relies, in large part, on carrier forecasts, but the current CO Code Guidelines do not provide any mechanism by which the NANPA can evaluate the reasonableness of these forecasts. Third, because the COCUS is conducted only once a year, any analyses based on COCUS information become quickly outdated. Finally, the forecast and utilization data collected through COCUS lacks sufficient specificity to enable the NANPA to determine how

¹⁰⁵ CO Code Guidelines at § 6.4.

¹⁰⁶ *Id.* at § 9.4.

¹⁰⁷ Our rules require the NANPA to monitor the use of NXX codes within each NPA, forecast the date by which all NXX codes within that NPA will be assigned, and plan and initiate area code relief. See 47 C.F.R. §§ 52.13, 52.15, and 52.19.

¹⁰⁸ *But see* PageNet comments at 19 (arguing that there is no need to collect more information).

carriers are utilizing the numbers currently assigned to them.¹⁰⁹ Unless addressed, this lack of detail will hamper numbering resource optimization efforts, because utilization data drives many of the number optimization measures proposed in this Notice, or otherwise being considered by the industry or state commissions. For example, the NANPA would need detailed utilization data to confirm that a carrier had met utilization rate requirements such as those proposed above.¹¹⁰ Moreover, accurate and detailed utilization data is necessary to maximize the benefits of number pooling, both to ensure that carriers fully utilize existing blocks of numbers before they request additional blocks, and to determine which blocks of numbers are eligible for contribution to the pool.¹¹¹ We find that these shortcomings render the current COCUS increasingly unreliable as a tool for managing current and future numbering resources.

73. *Mandatory data submission requirement.* Consistent with the recommendation made by the NANC,¹¹² and supported by a number of the parties that commented on the NANC report,¹¹³ we tentatively conclude that we should mandate that all users of numbering resources supply forecast and utilization data to the NANPA. We seek comment on this tentative conclusion. We further tentatively conclude that, as part of our obligation to develop a cogent national numbering resource policy that will ensure adequate numbering resources to all carriers, we must establish a more extensive, detailed and uniform reporting mechanism that will improve numbering utilization and forecasting on a nationwide basis. Several of the parties that commented on the NANC report support the adoption of a more detailed reporting mechanism that is operated at the federal level.¹¹⁴ In addition, we tentatively conclude that the NANPA should serve as the single point of collection for

¹⁰⁹ The 1999 COCUS requested carriers to provide aggregate NPA-wide number utilization data.

¹¹⁰ See *supra* ¶¶ 64-68.

¹¹¹ See North Carolina Commission comments at 6; see also *infra* Section V.C.

¹¹² See NANC Meeting Minutes, Nov. 18-19, 1998. NANC reached consensus on the obligation of service providers to report utilization and forecast data to the NANPA and NANC reaffirmed its commitment to maintaining confidentiality on the collection of data.

¹¹³ See, e.g., AirTouch comments at 4; AT&T comments at 16-17; Bell Atlantic comments at 7; Colorado Commission comments at 14; Madison comments at 3-4; Maine Commission comments at 7-8; MCI WorldCom comments at 30-31; New Hampshire Commission comments at 8; North Carolina Commission comments at 6. But see BellSouth comments at 17; PageNet comments at 18-20; PCIA comments at 12-13; SBC comments at 9-10.

¹¹⁴ See, e.g., AT&T comments at 17; Madison comments at 4; New Hampshire Commission comments at 8; Nextel comments at 17-18; SBC comments at 9-10. But see PageNet comments at 18-20; PCIA comments at 12-13.

telephone number usage and forecast data.¹¹⁵ The data from this reporting system would, however, be available to states that want to perform their own analyses to address NPA issues such as jeopardy situations and area code relief.¹¹⁶ We seek comment on these tentative conclusions.

74. *Specific data elements.* We seek comment on the specific data items carriers should be required to track. We seek comment on whether all NXX codeholders should be required to report the status of all telephone numbers within the NXX blocks assigned to them, according to the number status definitions set forth earlier in this section.¹¹⁷ In the alternative, we seek comment on whether utilization data reporting on a more aggregated basis (e.g., reporting on "telephone numbers unavailable for assignment" or some more aggregated set of telephone number status categories) would provide sufficient data to track accurately number utilization.

75. We propose that any utilization reporting obligation that we adopt would be in addition to the demand forecasting requirement that the COCUS currently places on carriers. We seek comment on whether any modifications should be made to improve the quality and accuracy of carriers' demand forecasts, although we believe that consistent utilization tracking, and the attendant ability to audit forecasts after the fact, may significantly improve the quality of these forecasts.

76. *Specificity of data.* We also seek comment on the level of granularity this utilization and forecast data should be reported, e.g., at the NPA level, rate center level, or thousands-block level. We tentatively conclude that, in order to provide information that is meaningful for utilization tracking and forecasting purposes, telephone number status data should be reported at the rate center level, at a minimum. Additionally, we seek comment on whether we should also require the reporting of utilization data at the thousands-block level where thousands-block pooling has been, or is going to be, implemented. If we do require data to be reported at the thousands-block level, we seek comment as to whether we should exempt carriers that currently are not subject to LNP implementation obligations from having to report at this level of granularity, or whether there are benefits to be had from obtaining thousands-block level data from LNP-capable and non-LNP-capable carriers alike in an area that may move to thousands-block pooling. To the extent that commenters argue that more granular reporting requirements would impose greater costs and burdens on carriers, we ask

¹¹⁵ Accord PCIA comments at 12-13.

¹¹⁶ See, e.g., Florida Commission comments at 4-5; Maine Commission comments at 7-8; New Hampshire Commission comments at 7-8. But see PCIA comments at 12-13.

¹¹⁷ Accord Madison comments at 3-4.

that they provide specific cost estimates for comparison purposes, and explain in detail the burdens that would be imposed. In addition, we seek comment on whether we should limit utilization data collection to NPAs within the largest 100 MSAs and jeopardy NPAs, and whether we should consider less granular data-reporting requirements for areas outside the largest 100 MSAs or jeopardy NPAs.

77. *Frequency of reporting.* We tentatively conclude that carriers should report utilization and forecast data on a quarterly basis, rather than the current annual reporting cycle, because the pace of number exhaust is so great in many areas that annually collected information becomes so badly outdated that analyses based on it are useless. We note that the NANC is currently examining whether to establish quarterly, semi-annual and annual COCUS reporting cycles, based on NPA growth rate and service provider size. We seek comment on whether we should differentiate between carriers in high-growth rate NPAs and low-growth rate NPAs in terms of reporting frequency, and, if so, on how to distinguish high-growth NPAs from low-growth NPAs. In the alternative, would a mechanism modeled after the current practice of conducting a "Jeopardy COCUS,"¹¹⁸ or additional round of forecast data collection when jeopardy is first declared in an area code, be sufficient to provide additional utilization and forecast data in high-growth NPAs? We further seek comment on whether there are other appropriate distinctions that should be drawn among carriers with respect to reporting frequency.

78. *Confidentiality of data.* Several parties that commented on the NANC report express concern about the preservation of confidentiality of the utilization data they will be required to provide.¹¹⁹ We seek comment on what, if any, special provisions should be established to protect the confidentiality of data disclosed to the NANPA, the FCC, and/or the state commissions. Under Exemption 4 of the Freedom of Information Act (FOIA), the FCC need not disclose "commercial or financial information . . . [that is] privileged or confidential."¹²⁰ Based on the proposals set forth above in this section, we seek comment on what specific information that we may request from carriers would fall within this exemption. Some commenters have voiced particular concern about the ability of state commissions to protect the confidentiality of their submissions.¹²¹ Regarding proposals to enhance the

¹¹⁸ CO Code Guidelines at § 9.4.

¹¹⁹ See, e.g., AirTouch comments at 21; AT&T comments at 17; PCIA comments at 12-13.

¹²⁰ 5 U.S.C. § 552(b)(4). Under FOIA, the Commission is required to disclose agency records on request, unless they contain information that fits within one or more of the exemptions from the Act. Even when particular information falls within the scope of a FOIA exemption, agencies are generally afforded the discretion to disclose the information on public interest grounds. *Chrysler Corp. v. Brown*, 441 U.S. 281, 292-94 (1979).

¹²¹ See, e.g., AirTouch comments at 21; PCIA comments at 12-13.

COCUS, the NANC has recommended that states have access to aggregate utilization data and solely for a stated purpose.¹²² Also, the NANC determined that states may obtain carrier-specific data only in states where a legally enforceable confidentiality agreement is in place.¹²³ We seek comment on the NANC's recommendations concerning use of confidential data by the state commissions.

79. *Cost of data collection activity.* To ensure that the data collection requirements are not overly burdensome, we seek comment on the cost of the proposed data collection activities to service providers. Specifically, we seek comment on the estimated fixed and incremental costs of that collection. We also seek comment on whether the fixed costs can be shared. In addition, we seek comment as to whether there are any economic, legal, or business reasons for excluding small carriers from reporting requirements, or otherwise scaling back their reporting obligations. Alternatively, we seek comment whether such an exclusion for small carriers would be necessary if the proposed additional utilization data were only collected from NPAs in the largest 100 MSAs and in jeopardy NPAs.

80. *Alternative data collection options.* Finally, we seek comment on several alternative data collection options the industry has proposed. The forecast and utilization reporting process in the current Thousand Block Pooling Guidelines is one such option.¹²⁴ These guidelines require carriers operating in an NPA where pooling has been or is planned to be implemented to submit forecasts and utilization reports semiannually by thousands-block within a rate area.¹²⁵ The pooling forecast is based on an 18-month projection. If a carrier identifies a significant change in its forecast, it is required to provide an updated forecast. We seek comment on whether the data collection provisions in these pooling guidelines should be applied more generally, i.e., outside of pooling areas, and to all carriers, rather than just carriers participating in pooling.

81. Another, similar proposal is the Line Number Utilization Survey (LINUS) data collection model designed by NANPA staff as a replacement for COCUS and presented for consideration to the NANC.¹²⁶ LINUS would conduct a survey of forecast data quarterly at

¹²² See NANC Meeting Minutes, Nov. 18-19, 1998.

¹²³ *Id.* As a sanction, NANC proposes that a state's violation of the confidentiality requirement would be the loss of the prerogative to obtain such data in the future.

¹²⁴ Thousand Block Pooling Guidelines at § 6.0.

¹²⁵ *Id.* However, carriers that are exempt from LNP, operate in a non-pooling area, or utilize a switch technically incapable of pooling are exempt from these data collection requirements.

¹²⁶ See NANC Meeting Minutes, May 27, 1998.

the rate center level. Utilization data would be collected at the thousands-block level by rate center, quarterly in the largest 100 MSAs, and semiannually in the remaining MSAs. Also, collection of utilization data collection would occur more often in NPAs that are nearing jeopardy. Participation in LINUS would be mandatory. We seek comment on whether LINUS would meet our data collection requirements, or whether modifications to LINUS are required in order to make it more responsive to our forecasting and tracking needs.

82. In addition, other industry parties have submitted proposals to NANC for a number utilization and forecasting mechanism to replace COCUS.¹²⁷ AT&T's proposed model would, like COCUS, collect forecasting and utilization information annually, at the NPA level, but with the capacity for "real time" updates at other times.¹²⁸ In addition, the forecast report in the AT&T model would be separated into components for forecasts of growth codes, initial codes for new entrants, and initial codes for new switching entities. US West also proposed a COCUS alternative that involves a two-stage process.¹²⁹ The first stage, referred to as the "Top-down Analysis," relies on historical COCUS data and mathematical modeling to develop initial exhaust forecasts for each area code. After it has been determined that a particular NPA will exhaust within a selected period, the second stage of this proposal would be applied. The second stage involves a "Bottoms-up Analysis," which relies on user input similar to the existing COCUS system, but employs a mechanized data collection process. Although these proposals are presently under review by NANC, we seek comment regarding whether we should adopt any of their specific components.

E. Audits

83. The only comprehensive method for verifying the validity and accuracy of utilization data submitted by users of numbering resources is through the use of audits. Audits can also be used to verify compliance with non-quantitative rules or guidelines, for example, to determine whether a carrier actually has subscribers for "assigned" numbers, or valid reservation requests. Audit requirements may also, independently, serve as a deterrent to carrier noncompliance or strategic behavior, such as hoarding of numbers. Because we believe that audits can serve as a valuable tool in our efforts to promote numbering resource optimization, we propose that the need verification measures proposed and the data collection program proposed earlier in this section be supplemented with a comprehensive audit program

¹²⁷ See NANC Meeting Minutes, Feb. 17-18, 1999, at 7.

¹²⁸ "A Minimalist Code Utilization and Forecasting Model," submitted by AT&T to the Numbering Resource Optimization (NRO) Working Group. See NANC Meeting Minutes, Feb. 17-18, 1999, at 7.

¹²⁹ "COCUS Replacement Model," submitted by U S West to NRO Working Group. See NANC Meeting Minutes, Feb. 17-18, 1999.

that verifies carrier compliance with federal rules and industry numbering guidelines. We seek comment on this proposal.

84. *Types of audits.* Three types of audits are commonly used: "for cause" audits, regularly scheduled audits, and random audits. As further detailed below, we seek comment on whether and, if so, how, all three types of audits should be employed as part of a comprehensive audit program to monitor carrier compliance with number allocation and administration rules and guidelines. We further seek comment on the comparative costs and benefits associated with performing each type of audit.

85. "For cause" audits are conducted if there is reason to believe that the information a carrier has provided, e.g., in connection with either reporting requirements or an application for additional resources, is inaccurate or misleading. Information providing a basis for initiating a for cause audit may be drawn from a variety of sources.¹³⁰ Because for cause audits are triggered only when there is some cause to believe that a carrier may be in noncompliance, they are a highly cost-effective and necessary tool for monitoring number utilization and forecasting.¹³¹ For this reason, we tentatively conclude that we should include for cause audits within the comprehensive audit program proposed. We further seek comment on whether we should consider subsequent follow-up audits on carriers that in previous years had been subject to for cause audits for supplying inaccurate or misleading data or forecasts.

86. Regularly scheduled audits are repeated on a fixed schedule for a representative cross-section of carriers, and, in this context, would be applied to all entities that obtain numbering resources. Perhaps more so than other types of audits, regularly scheduled audits may encourage carriers to adopt better number utilization practices, because sooner or later, all carriers would be subject to a regularly scheduled audit.¹³² Given the large number of carriers that hold numbering resources, we tentatively conclude that regularly scheduled annual audits of all numbering resource holders would be too costly to be justified. Instead,

¹³⁰ For example, an auditor may evaluate information submitted by a carrier by applying statistical techniques to industry or carrier data, or by using independently developed information or historical trend data. Statistical techniques are used frequently to identify "outliers," e.g., carriers whose data fails to conform to a range of actual values for other reporting carriers or to project "expected values" for certain reported data. With respect to numbering resources, statistical analyses could be used to identify inaccurate reporting or unusually high forecasts of numbering requirements.

¹³¹ See, e.g., GTE comments at 19-20 (indicating that audits should be conducted in response to an unusual request for numbers or a significant variance from an existing forecast).

¹³² See, e.g., Florida Commission comments at 4-5.

we seek comment on whether conducting regularly scheduled audits every three years represents a reasonable compromise between effective auditing and cost containment.¹³³

87. Random audits provide a third means by which carrier utilization and forecast information can be reviewed for accuracy. Through such audits, the auditor reviews a specific carrier's information without triggering the expense and burden of regularly scheduled audit of all carriers. In addition, to better target problem areas, random audits could focus on those carriers that historically have had a high demand for numbers or new carriers that appear to be seeking a large quantity of numbers. For this reason, random audits may be used more frequently and flexibly than regularly scheduled audits. At the same time, allegations of unusual or inappropriate conduct are not necessary to trigger a random audit. We seek comment on whether we should adopt a random audit approach for use in situations where accurate reporting is paramount, such as in area codes where jeopardy has been declared, or whether there are other situations in which random audits would be appropriate.

88. *Audit responsibility.* We believe that numbering resource audits should be conducted by a neutral entity. One possibility is that the NANPA could conduct these audits.¹³⁴ Because the industry guidelines envision that the NANPA itself, in its capacity as Central Office code administrator, will be subject to periodic audits for compliance with numbering administration guidelines and effective management of numbering resources,¹³⁵ however, the NANPA may not be the best choice to audit code holders on similar issues.¹³⁶ It is also possible that the FCC, state public utility commissions, or other neutral third parties could conduct numbering resource audits.¹³⁷ We seek comment on how audit responsibility should be apportioned among these possible candidates. We further seek comment on whether we should direct the NANC to select an entity to audit carrier number utilization and forecast data using a competitive bidding process that is subject to our approval.

¹³³ See New York Commission comments at 22 (recommending that regularly scheduled audits should be conducted every three to five years).

¹³⁴ Accord BellSouth comments at 20; Colorado Commission comments at 15. But see PageNet comments at 18-20.

¹³⁵ See CO Code Guidelines, Appendix A (regarding audits to be performed in conjunction with the NXX code assignment process).

¹³⁶ See GTE comments at 19-20 (supporting selection of an independent third party, unrelated either to the carrier or the NANPA, to conduct audits).

¹³⁷ MCI WorldCom comments at 33 n.65 (Commission should consider delegating enforcement of data collection and auditing responsibilities to state commissions).

89. *Audited information/procedures.* We believe that the audit program should address all aspects of carrier compliance with our numbering resource rules and industry numbering guidelines, focusing in particular on utilization data reporting and forecasting. It will be easier to develop certain auditing procedures, including specific triggers related to for cause and random audits, after data reporting requirements have been finalized. We seek comment on the process by which specific auditing procedures should be established, as well as on the development of statistical and analytical approaches that will be required to evaluate the quality and validity of reported data. We ask parties to comment, in particular, on how we may structure an audit process that is flexible enough to focus on new problems or issues as they arise.

90. We note that the NANC and the INC have been working to develop a comprehensive audit process,¹³⁸ and we direct the NANC to provide a progress report regarding this work effort to the Common Carrier Bureau on or before the deadline for initial comments in this proceeding. We also seek comment on the best method for soliciting the input of state public utility commissions, who have valuable insight into and experience with potential problem areas. While we believe that we should develop a national framework and procedures for numbering resource audits, so that there is some degree of uniformity across the country in the way that audits are conducted, we also recognize that state commissions should have a major role in the development of this framework and procedures.

F. Enforcement

91. Many of the parties that commented on the NANC Report acknowledge a need both to strengthen the numbering allocation and assignment guidelines and to find an appropriate enforcement mechanism to ensure compliance on the part of all users of the numbering resource.¹³⁹ We seek comment on what actions we should take to enhance the enforceability of the number utilization and optimization provisions contained in the guidelines.

¹³⁸ See *supra* note 40 and accompanying text. See also Letter from Alan C. Hasselwander, Chairman, NANC, to Jo Gallagher, INC, dated July 30, 1997. This document can be found at <<http://www.fcc.gov/ccb/NANC/NANCCorr.html>>

¹³⁹ See AirTouch comments at 4, 23; Bell Atlantic comments at 7-8 (stating that the improper use of Nexus should be a sanctionable offense); CVSI comments at 4-5 (recommending that the provisions in the CO Code Guidelines that discourage hoarding and warehousing of NXX codes should apply to all NANP resources, particularly telephone numbers, and should be enacted into law by the Congress and codified in the Commission's rules); Colorado Commission comments at 15-16; Maine Commission comments at 4-5 (stating that code holders who do not comply with the CO Code Guidelines should be penalized); MCI WorldCom comments at 33. But see GTE comments at 18; PageNet comments at 18-20; SBC comments at 19-20.

92. We tentatively conclude that the NANPA, the FCC and the state commissions each have distinct roles to play in enforcing the provisions of the CO Code Guidelines, and other numbering utilization rules, and we seek comment on specifying more precisely what those roles are. We note that, while the FCC retains the authority to take any necessary enforcement action, in many instances, the NANPA would be the first entity to detect a carrier's violation of a rule or guideline, such as failing an audit. Because the NANPA might often be in the best position to take swift and effective enforcement action, commenters to the NANC Report suggest that the NANPA should be delegated additional enforcement authority.¹⁴⁰ We tentatively conclude that the NANPA should be empowered to withhold NXX codes as a sanction for violation of the CO Code Guidelines, especially where the violation involves failure or refusal to supply accurate and complete utilization or forecast data.¹⁴¹ We seek comment on this tentative conclusion and the circumstances in which the NANPA should be empowered to withhold numbering resources. For example, should NANPA be authorized to restrict future requests for numbering resources, as a sanction for prior violations, where the carrier has no pending request for resources when the violation is detected,¹⁴² or would this type of situation be better addressed using alternative sanctions?¹⁴³ We also seek comment on whether any additional enforcement authority should be delegated to the NANPA.

93. There are several situations in which enforcement actions are more appropriately taken by regulatory authorities than by the numbering administrator. For example, in some situations, the decision to take enforcement action involves a more subjective evaluation, or would otherwise call the NANPA's neutrality into question. In addition, regulatory authorities should provide a route of appeal from NANPA enforcement actions. We seek comment regarding the appropriate allocation of number administration enforcement responsibilities between the FCC and state regulators. Currently, most state commissions are not performing number administration functions.¹⁴⁴ We seek comment

¹⁴⁰ AT&T states, however, that final authority to impose sanctions should lie with the FCC. AT&T comments at 17-18.

¹⁴¹ Many commenters support the adoption of this measure. *See, e.g.*, Bell Atlantic comments at 7; Colorado Commission comments at 14-15; MCI WorldCom comments at 30-31; New York Commission comments at 23; Ohio Commission comments at 6; SBC comments at 10.

¹⁴² *Cf.* New York Commission comments at 24.

¹⁴³ *See* Colorado Commission comments at 15 (when a carrier needs no additional numbering resources, FCC-imposed fines, or state enforcement actions, are the appropriate sanction).

¹⁴⁴ Out of all the 50 states, only Ohio has opted to perform the NXX administration function when NANP administration was transitioned from Bellcore to Lockheed Martin. *See* Letter from Ohio Commission to NANPA, Feb. 5, 1998, responding to Letter from Joseph F. Franlin, NANPA, dated Nov. 7, 1997, requesting

regarding whether delegating additional enforcement authority to state commissions would place the states in the position of performing numbering administration tasks, and if so, whether this should be any cause for concern.

94. In other situations, such as where a violating carrier has no need for additional numbering resources, withholding these resources would have no effect as a sanction. We tentatively conclude that fines and forfeitures, and possibly, in extreme situations, revocation of certification and licenses should be available as possible sanctions for violation of the CO Code Guidelines, all of which could only be imposed by regulatory authorities.¹⁴⁵ We seek comment on this tentative conclusion. In particular, if state revocation of a wireline carrier's certification or the Commission's revocation of a wireless carrier's license is an appropriate sanction for CO Code Guidelines violations, what standard should be used to trigger this specific sanction option?

G. Reclamation of NXX Blocks

95. Reclamation and reuse of unused NXX blocks is a numbering optimization measure that may be one of the quickest and easiest measure to implement. As outlined below, the CO Code Guidelines contain provisions for NXX block reclamation. The NANC Report notes, however, that there has been "some hesitancy" on the part of the NANPA to enforce these reclamation provisions, and recommends a current review and modification of the NXX code reclamation procedure to address the current competitive status of the industry.¹⁴⁶ In such light, we seek comment on several proposals to clarify and strengthen these reclamation provisions.

96. *NXX Activation Rules.* The CO Code Guidelines require an NXX assignee to activate the NXX code by placing it "in service" within six months of assignment.¹⁴⁷ Currently, an NXX code is considered to be "in service" when the assignee has transmitted

state commissions to notify that they intend to perform the function of initiation and development of area code relief plans.

¹⁴⁵ See Madison comments at 4; Colorado comments at 15; MCI WorldCom comments at 30-31; New York Commission comments at 23.

¹⁴⁶ NANC Report at § 11.b.

¹⁴⁷ See CO Code Guidelines at § 6.3.3. Requests for NXX code assignments cannot be made more than six months prior to the requested effective date. Also, because it takes 66 days to process a request for an NXX code, the guidelines state that applicants should request effective dates that are at least 66 days after the date of the receipt of the code request. CO Code Guidelines at § 6.1.2.

local routing information to the LERG.¹⁴⁸ The carrier, however, does not have to assign and activate any number from the block to end-user customers in order to satisfy the activation requirement.¹⁴⁹ Furthermore, an assignee may apply to the NANPA for an extension of up to an additional 90 days to place the NXX code in service.¹⁵⁰ The CO Code Guidelines also allow an assignee to reserve an NXX code for up to eighteen months.¹⁵¹ In addition, an assignee of a reserved NXX code is eligible to receive a single six-month extension of the reservation if it is able to demonstrate that the proposed code use date was missed due to circumstances beyond its control.¹⁵²

97. *NXX Reclamation Rules.* The CO Code Guidelines require the assignee to return the NXX code to the NANPA if it has not been activated within six months of assignment, if the assignee no longer requires that NXX code for the purpose it was originally assigned, or if the service for which it was assigned is disconnected.¹⁵³ Moreover, the CO Code Guidelines direct the NANPA to initiate reclamation action if the NXX code has not been activated within 18 months.¹⁵⁴ The CO Code Guidelines direct the NANPA to refer to

¹⁴⁸ See CO Code Guidelines at § 13.0.

¹⁴⁹ CO Code Guidelines at § 6.1.2.

¹⁵⁰ CO Code Guidelines at §§ 8.1 and 8.2.3. Such an extension request must include the reason for the delay and a new activation time commitment. *Id.* at § 8.1. The NANPA may extend the activation deadline if it determines that the reason for non-activation is not within the control of the code assignee. CO Code Guidelines at § 8.2.3.

¹⁵¹ CO Code Guidelines at § 4.4. The applicant must demonstrate that the reservation of the code is essential to accommodate technical or planning constraints or pending regulatory approval of a tariff, certification, or registration. *Id.*

¹⁵² CO Code Guidelines at § 4.4.

¹⁵³ CO Code Guidelines at §§ 8.1 and 6.3.3.

¹⁵⁴ CO Code Guidelines at § 5.2.9. This translates to a one-year gap between the expiration of an NXX assignee's code activation deadline and the commencement of reclamation action by the NANPA.

the INC for resolution certain instances where NXX codes have not been returned for reassignment by the assignee,¹⁵⁵ as well as certain applications for extension of the NXX code activation date.¹⁵⁶

98. *Modification of current CO Code Guidelines.* In their comments on the NANC Report, several parties support the enforcement of the current reclamation rules by the NANPA,¹⁵⁷ while others propose modifications to the guidelines.¹⁵⁸ We tentatively conclude that the current activation and reclamation requirements and timeframes in the CO Code Guidelines should be modified in several ways to encourage more efficient use of NXX codes. First, we seek comment on whether the definition of placing an NXX code "in service" should be clarified to mean not just activation of the code through the transmission of local routing information to the LERG, but also that the carrier has begun to activate and assign to end users numbers within the NXX code.¹⁵⁹ We tentatively conclude that this clarification will better ensure that NXX codes are not left idle for a lengthy period. We note that adopting such a definition, by itself, could lead to undesirable behavior on the part of carriers, as they might simply activate a few numbers in an otherwise unused NXX block in order to avoid reclamation of the block. Therefore, we seek comment regarding whether such a change in the definition of "in service" should be adopted only in connection with a sequential numbering requirement,¹⁶⁰ or whether we should adopt other safeguards to prevent this type of strategic behavior.

¹⁵⁵ Specifically, the NANPA is to refer to the INC instances where an NXX code has not been activated within the six-month timeframe, where a previously activated code is not now in use, and where an activated code is not being used in accordance with the guidelines. CO Code Guidelines, § 8.2.2.

¹⁵⁶ Specifically, the NANPA is to refer to the INC instances where: 1) activation has not occurred within the 90-day extension; 2) the administrator believes that the activation has not occurred due to a reason within the assignee's control; or 3) the assignee requests an extension in excess of 90 days. CO Code Guidelines, § 8.2.2. When the INC is unable to reach a consensus resolution or the assignee refuses to comply with the resolution, the CO Code Guidelines direct the INC to refer the case to the appropriate regulatory authority. *Id.* at § 8.3.

¹⁵⁷ New Hampshire Commission comments at 6; New York Commission comments at 17; Texas Commission comments at 29 (stating that sound numbering policy dictates that no service provider be permitted to hold NXX codes unless they are being used by customers); Sprint comments at 34; SBC comments at 22. *See* PageNet comments at 17 (urging the Commission to require that all clean NXX codes be available for future use by all carriers, regardless of whether they participate in pooling).

¹⁵⁸ BellSouth comments at 18; New Hampshire Commission comments at 6; New York Commission comments at 1, 17.

¹⁵⁹ SBC comments at 22-23. SBC also states that the responsibility for modifying the reclamation rules in the manner it suggests should lie with INC. *Id.*

¹⁶⁰ *See infra* ¶¶ 190-191.

99. We also seek comment on modifying the current reclamation provisions by requiring the NANPA to initiate NXX code reclamation within 60 days of expiration of the assignee's applicable activation deadline. We tentatively conclude that this modification will limit the length of time that an NXX code has been left idle and encourage better recycling of unused NXX codes. We further seek comment on whether there exist competitive pressures or other reasons that should discourage us from reducing the amount of time during which a carrier may reserve an NXX code from 18 months to three months, and, correspondingly, to reduce the period of potential extension of that reservation from six months to 30 days. We seek comment on whether we should consider any other modifications to the reclamation provisions to improve their enforceability, such as SBC's suggestion that we should maintain firm deadlines for activation by removing the discretion the NANPA presently has to determine the length of an extension.¹⁶¹ Finally, we seek comment on whether we should direct the INC to incorporate these proposed changes into the CO Code Guidelines, or whether we should adopt these proposals as FCC rules.

100. *Delegating additional authority to the NANPA and the states.* We seek comment on what, if any additional authority we should delegate to the NANPA to enforce the NXX block reclamation provisions.¹⁶² We tentatively conclude that we should delegate additional authority to state public utility commissions to order NXX block reclamation in accordance with the CO Code Guidelines, and any changes thereto adopted during the course of this proceeding.¹⁶³ We believe that this grant of authority may increase the effectiveness of numbering conservation measures adopted by the states.¹⁶⁴ We seek comment regarding whether we should direct the NANPA to refer questions or disputes about code activation, deadline extensions or reclamation directly to the state commissions for resolution, rather than to the INC. State commissions may be able to resolve such issues more quickly and decisively than an industry consensus process.¹⁶⁵ We also seek comment regarding whether

¹⁶¹ SBC comments at 22.

¹⁶² See Texas Commission comments at 29 (recommending that, as an alternative to giving state commissions more authority to order NXX code reclamation, the NANPA be delegated additional authority to order and enforce reclamation of NXX codes when pooling and rate center consolidation measures are being implemented in an NPA).

¹⁶³ See New York Commission comments at 18; Texas Commission comments at 28-29.

¹⁶⁴ See Texas Commission comments at 28-29 (recommending that states be given authority to order return of NXX codes in connection with implementing rate center consolidation and number pooling trials).

¹⁶⁵ See New York Commission comments at 18 (stating that, because INC's decisions are made by industry consensus, expedited action is difficult to achieve).

we should require state commissions to establish any particular type of dispute resolution or appeals processes in connection with issues regarding activation and reclamation of NXX codes.

H. Cost Elements and Cost Recovery

101. In the Executive Summary accompanying the NANC Report, the NANC stated that "[c]ost/benefit analysis and determination of cost recovery mechanisms loom as high priorities before going forward with implementation of any of the future optimization methods presented in this, or future [NANC] reports."¹⁶⁶ The NANC Report does not, however, address the costs of various optimization measures nor does it recommend a mechanism for recovery of costs associated with those optimization methods.

102. We seek comment on the specific cost elements of the proposed administrative measures, including a detailed breakdown of the types of costs involved in implementation of each particular administrative solution (for example, increasing staff to monitor number usage, software to complete administrative tasks, etc.), as well as the overall magnitude of the costs of the various administrative solutions. We also seek comment on whether the benefits of moving to a more efficient use of our numbering resources achieved through implementation of the proposed administrative measures outweigh the costs of implementation of those administrative measures. We ask that commenters support their conclusion with specific cost data, where available, or other evidence relevant to a cost/benefit analysis.

103. With respect to cost recovery, we tentatively conclude that the costs of the administrative solutions proposed above should be allocated and recovered through the existing NANPA fund formula.¹⁶⁷ Our conclusion is based on the assessment that the proposed administrative solutions appear, in large part, to involve changes in the manner in which the NANPA oversees and manages numbering resources. For example, a requirement that the NANPA verify an applicant's need for additional numbers may require the NANPA to evaluate the applicant's months-to-exhaust projection or to evaluate carrier data proving that a particular utilization level has been met. Similarly, the costs of collecting utilization data, conducting service provider audits, initiating reclamation of NXXs and other administrative costs may, in many cases, be directed to the NANPA. Furthermore, the implementation of

¹⁶⁶ NANC Report, Executive Summary at vii.

¹⁶⁷ All telecommunications carriers in the United States contribute to meet the costs of numbering administration. 47 C.F.R. § 52.17. Under the NANPA fund formula, each telecommunications carrier's contribution is based on the gross revenues from its provision of telecommunications services reduced by all payments for telecommunications services and facilities that have been paid to other telecommunications carriers. 47 C.F.R. § 52.17(b). The NANPA billing and collection agent, NECA, calculates, assesses, bills, and collects payments for numbering administration from telecommunications carriers on an annual basis. 47 C.F.R. § 52.16.

administrative solutions will benefit all telecommunications carriers by resulting in a more efficient use of numbering resources and by delaying the need for new area codes, as well as the exhaust of the NANP. We seek comment on this tentative conclusion.

104. In addition, because the administrative solutions we propose as possible ways of increasing the efficiency with which telecommunications carriers use numbering resources fall within the scope of numbering administration matters,¹⁶⁸ we tentatively conclude that section 251(e)(2) requires that the costs of the administrative solutions be borne by all telecommunications carriers on a competitively neutral basis.¹⁶⁹ We tentatively conclude that including the costs of the administrative solutions in the NANPA fund will result in the allocation and recovery of those costs from all telecommunications carriers on a competitively neutral basis and should not overburden any one carrier or class of carriers. We seek comment on these tentative conclusions. Commenters should address the Commission's interpretation that "on a competitively neutral basis" means that the costs borne by each carrier do not affect significantly any carrier's ability to compete with other carriers for customers in the marketplace¹⁷⁰ and whether the proposed cost recovery mechanism is consistent with this interpretation. Parties that oppose our tentative conclusions should propose specific alternative methods for allocating and recovering the costs of administrative solutions to the numbering crisis on a competitively neutral basis. In addition, parties that argue that the Commission has authority to exclude a class or classes of carriers from the costs of the proposed administrative solutions should provide a detailed discussion of their position, including applicable statutory and regulatory authority. Commenters also should identify which class or classes of carriers should be excluded and why.

V. OTHER NUMBERING OPTIMIZATION SOLUTIONS

A. Introduction

105. In Section IV, we considered a variety of administrative measures aimed at ensuring that carriers obtain and use numbering resources efficiently. In this section, we consider and seek comment on additional numbering optimization methods that could be implemented in addition to, or in combination with, these administrative measures.

¹⁶⁸ See *supra* Section III.A.

¹⁶⁹ 47 U.S.C. § 251(e)(2).

¹⁷⁰ Telephone Number Portability, *First Report and Order and Further Notice of Proposed Rulemaking*, CC Docket No. 95-116, 11 FCC Rcd 8352, 8419 (1996) (*Telephone Number Portability First Report and Order*).

106. First, we consider rate center consolidation. Rate center consolidation involves creating larger geographic areas in which individual NXX codes can be used by consolidating or combining existing rate centers. Because many carriers, particularly competitive local exchange carriers, require NXX codes in most or all rate centers in an NPA to establish a competitive "footprint," establishing larger rate centers has significant potential to reduce the demand for NXX codes. Traditionally, rate center consolidation has been carried out at the state level. We seek comment on ways in which we may create incentives for state commissions and local exchange carriers to pursue this measure more aggressively.

107. Another potential numbering resource optimization method is mandatory ten-digit dialing for all telephone calls, whether they are local or toll calls. To date, we have implemented mandatory ten-digit dialing only in area code overlay situations. Expanding the use of ten-digit dialing could yield certain numbering optimization benefits, by making overlays less disruptive to implement, freeing up protected NXX codes and allowing use of "0" or "1" in the so-called "D" digit (the first number of the NXX code). At the same time, mandatory ten-digit dialing imposes certain burdens on consumers, who would no longer be able to rely on traditional seven-digit dialing for local calls.

108. We also consider number pooling as a numbering optimization method. Number pooling allows numbers to be allocated in smaller increments, so that multiple carriers can use numbering resources from a single NXX code. We seek comment on whether mandating some form of number pooling is necessary to achieve our numbering optimization objectives, and if so, how and to what extent pooling should be implemented. We also seek comment on the potential costs and benefits of three specific number pooling methods: (1) allocation of numbers in blocks of a thousand (thousands-block pooling), (2) individual telephone number pooling (ITN), and (3) unassigned number porting (UNP). Because one common element of all three pooling alternatives is that they require participating carriers to have LNP capability, we seek comment on whether non-LNP-capable carriers should be subject to pooling requirements or whether there are other non-LNP-based alternatives to pooling that could be employed by such carriers to achieve comparable results.

109. Regardless of whether or to what degree number pooling may be implemented on a mandatory basis, there are a variety of technical and administrative issues associated with pooling. We therefore address the issue of technical standards for pooling, appointment of an administrator, and possible rules or guidelines for both donation of numbers to and withdrawal of numbers from a number pool. We also consider possible mechanisms that would allow for recovery of shared costs and carrier-specific costs associated with implementing and administering number pooling.

110. Finally, as an alternative to mandating that carriers employ any particular numbering resource optimization method, we consider whether we can achieve our number utilization objectives without the need for such mandates by allowing carriers to choose the optimization solutions that best suit their particular circumstances. We seek comment on a regime that would require carriers to meet a number utilization threshold, as proposed in Section IV, but leave to each carrier the decision about how to achieve the requisite level of utilization, e.g., through participation in thousands-block number pooling, rate center consolidation, porting unassigned numbers from other carriers, or simply returning excess codes.

B. Non-LNP-Based Solutions

1. Rate Center Consolidation

111. Rate centers are telephone company-designated geographic locations which are assigned vertical and horizontal coordinates within an area code.¹⁷¹ Historically, telephone numbers are assigned on an NXX code basis, and associated with a particular switch. For call rating purposes, each switch is associated with a particular rate center. For most carrier billing systems, the rate centers associated with the switches serving the calling and called parties are used to determine whether a call is local or toll and to compute the air mile distance for rating the toll call.¹⁷² Thus, most carrier billing systems rely on NPA-NXX code information for rating calls.

112. Because it is typically necessary for each facilities-based service provider to be assigned an NXX code for each rate center in which it provides service, the rate center structure places a great strain on numbering resources.¹⁷³ Moreover, although wireless carriers

¹⁷¹ NEWTON'S TELECOM DICTIONARY, 14th Edition, at 591. *See also* Local Exchange Routing Guide (LERG), Volume 2, Section 1 at 24 (March 1997). Incumbent local exchange carriers (ILECs) chose to establish the rate center structure as part of their network design for billing and pricing functions and no regulatory mandate requires its existence.

¹⁷² Colorado Commission comments at 5; NANC Report at § 1.1.

¹⁷³ Numbering assignment guidelines for companies choosing to perform call rating consistent with the traditional ILEC rate center configuration require the assignment of one NXX code per rate center. NANC Report at § 1.1. Thus, the combination of rate centers and 10,000 block number assignments causes area code exhaust even though thousands of individual telephone numbers remain unassigned to end users. Nextel comments at 9.

offer larger calling areas and thus require fewer NXX codes for the wireless service, they often must request as many NXX codes as are required to permit wireless customers to be called by wireline customers on a local basis.¹⁷⁴

113. Rate center consolidation is the combining or aggregating of several existing rate centers into fewer rate centers.¹⁷⁵ Rate center consolidation serves as a numbering optimization measure by enabling carriers to use fewer NXX codes to provide service throughout a region, thereby reducing the demand for NXX codes, improving number utilization, and prolonging the life of an area code.¹⁷⁶ In areas where there are contiguous rate centers with identical calling areas and identical exchange rates, rate center consolidation may be fairly easy and painless to implement.¹⁷⁷ Rate center consolidation will be most beneficial in areas where new entrants have NXX assignments, but service has not yet been activated.

114. Rate center consolidation may be an attractive numbering optimization measure because it enables carriers to maintain their existing call-routing and call-rating methods, is competitively neutral, does not require LRN LNP, and does not preclude the adoption of other numbering optimization methods.¹⁷⁸ Further, rate center consolidation may be flexibly implemented, on a state, NPA or multiple rate center basis, and sometimes may be

¹⁷⁴ NANC Report at § 1.5.2; Nextel comments at 10. Wireless carriers, however, often require fewer NXX codes than wireline carriers because they have larger local service areas. Bell Atlantic Mobile comments at 12. We note that, to enable the rating of incoming wireline calls as local, wireless carriers typically associate NXXs with wireline rate centers that cover either the business or residence of end-users. Also, wireless carriers may sometimes further minimize the number of wireline rate centers with which they need to associate their numbers by entering into reverse billing arrangements with local exchange carriers. Reverse billing arrangements enable toll charges associated with land to mobile calls to be paid by the CMRS carriers, instead of the initiating wireline caller.

¹⁷⁵ NANC Report at § 1.1.

¹⁷⁶ NANC Report at § 1.5.2. *See also* AirTouch comments at 16; MediaOne comments at 4-5; NASUCA comments at 4; PageNet comments at 10-11; Teligent comments at 3; Vanguard comments at 5 (stating that rate center consolidation can reduce CLEC consumption of NXX codes by 75% or more). Rate center consolidation, however, does not supply any additional NXX codes nor does it allow for code sharing between service providers. NANC Report at § 1.10.

¹⁷⁷ NANC Report at §§ 1.5.1 and 1.10.2; ALTS comments at 7; GTE comments at 8-9; PrimeCo comments at 3-4; Sprint comments at summary iv.

¹⁷⁸ NANC Report at §§ 1.1 and 1.10; NASUCA comments at 4; RCN comments at 2; Vanguard comments at 2.